

N. M. S.
No. 112321-2

CIRCULAR

RELATING TO THE

PHYSICAL EXAMINATION
OF RECRUITS

FOR ENLISTMENT IN THE
NAVY AND MARINE CORPS

(FOR THE USE OF STUDENT OFFICERS)



WASHINGTON
GOVERNMENT PRINTING OFFICE
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BUREAU OF MEDICINE AND SURGERY,
NAVY DEPARTMENT,
Washington, D. C., July 10, 1916.

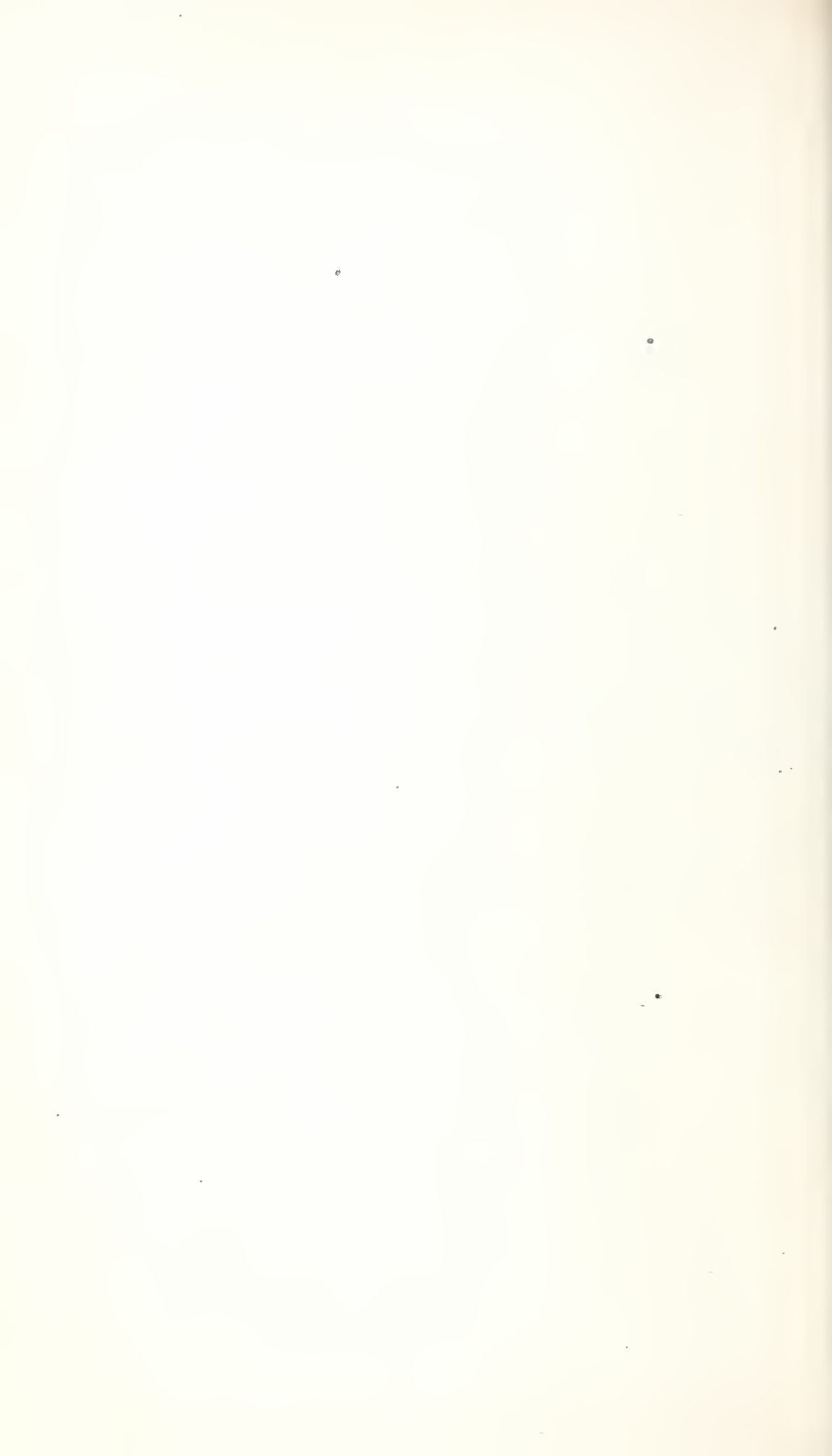
The "Circular relating to the physical examination of recruits for enlistment in the Navy and Marine Corps" is issued for use as a textbook by student officers participating in the naval medical correspondence course.

This circular will supersede the circular entitled "Extracts from regulations and instructions in relation to the physical examination of recruits for enlistment in the Navy and Marine Corps." (N. M. S. No. 112321-1. 1912.)

W. C. BRAISTED,
Surgeon General, U. S. Navy.

Approved.

JOSEPHUS DANIELS, *Secretary.*

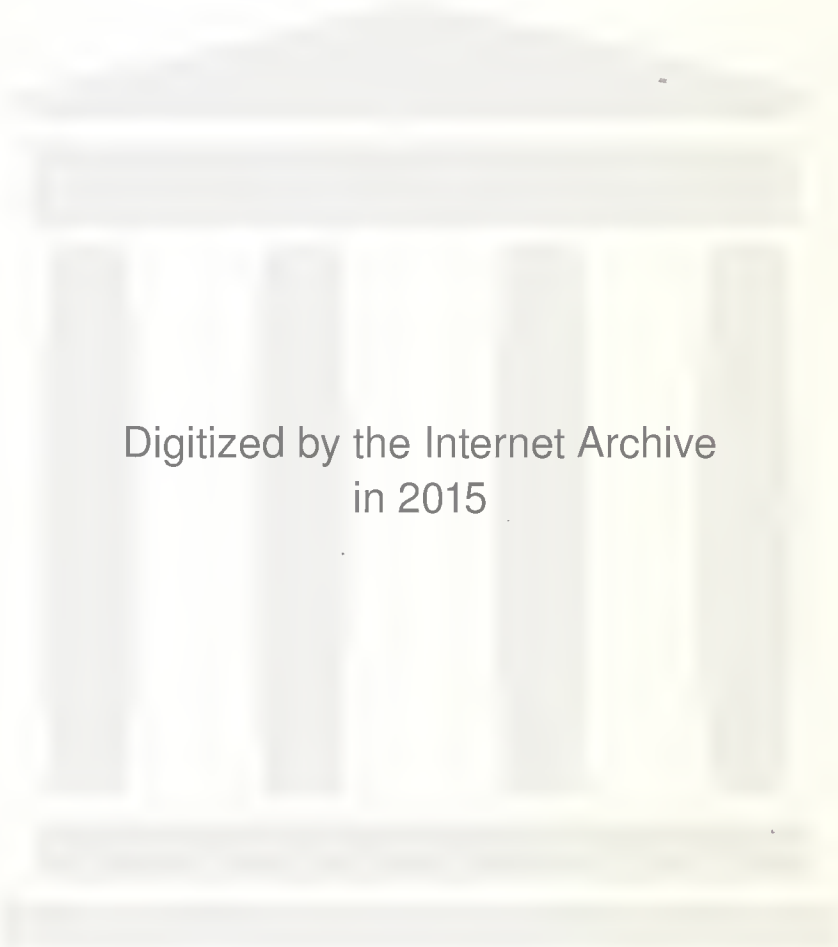


CIRCULAR RELATING TO THE PHYSICAL EXAMINATION OF
RECRUITS FOR ENLISTMENT IN THE NAVY AND MARINE
CORPS.

[Extracts from the Manual for the Medical Department of the United States Navy are incorporated in this circular. A few minor changes have been made in the text. The numbers in heavy-face type are those of articles in the manual.]

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PHYSICAL EXAMINATION OF RECRUITS FOR ENLISTMENT IN THE NAVY AND MARINE CORPS.

[From chap. 12, Manual for the Medical Department.]

ENLISTMENTS IN THE NAVY—LAWS RELATING TO ENLISTMENT.

2001. Enlistment of minors, deserters, insane, intoxicated, etc., prohibited. Secs. 1420, 1624 (19) R. S.; acts May 12, 1879, Feb. 23, 1881.

2002. Term of enlistment. Sec. 1573, R. S.; acts Mar. 3, 1899, Aug. 22, 1912.

2003. Term of enlistment, minors. Sec. 1418, R. S.; acts May 12, 1879, Feb. 23, 1881.

2004. Consent of parents and guardians required before enlistment of minors. Sec. 1419, R. S.; acts May 12, 1879, Feb. 23, 1881.

2005. Enlistments in the Marine Corps. Act Mar. 3, 1901.

2006. Physical examination of men of the Naval Militia upon muster into service of the United States. (Act of Feb. 16, 1914.)

NAVY REGULATIONS AND NAVAL INSTRUCTIONS RELATING TO PHYSICAL EXAMINATION FOR ENLISTMENT.

2011. Every person enlisted must pass physical examination prescribed in medical instructions. (I 3201-3212); R 3523 (1).

2012. Finger prints to be taken. R 3523 (2).

2013. Records to be made of persons enlisted with physical disability. R 3523 (3).

2014. Minors under 14 years of age, insane, and intoxicated not to be enlisted. R 3524 (2).

2015. Reenlistments authorized if physically qualified. R 3526.

2016. Continuous-service men disqualified. R 3528.

2017. Entries to be made in service record. R 3541; R 3542 (2).

2018. Marines enlisted must pass physical examination. R 4151 (2).

2019. Reenlistment of marines with disability. R 4151 (3).

2020. Disabilities to be entered on enlistment papers. R 4151 (4).

2021. Persons examined physically to be entered on card (rough form X). I 3201.

2022. Examination to be conducted by medical officer. I 3202.

2023. Examination to be completed and not terminated upon discovery of disqualification. I 3203.

2024. Medical officer who passes recruit subsequently surveyed to be held responsible. I 3204.

2025. Inspection and inquiry by medical officer. I 3205.

2026. Intelligence and detection of mental defects. I 3206.

2027. Age of applicant to be kept in mind. I 3207.

- 2028. Entries to be made in service and health records. I 3208.
- 2029. Defects waived by department. I 3209.
- 2030. Recruits to be reexamined on receiving ship. R 3511; I 3210.
- 2031. Recruits to be immediately vaccinated. I 3211 (1).
- 2032. No recruit to be transferred until vaccinated. I 3211 (2).
- 2033. Typhoid prophylaxis to be administered. I 3212.
- 2034. Examination of eyesight of gun pointers. I 2501 (3).

CIRCULARS RELATING TO ENLISTMENT.

2041. Circular relating to the enlistment of men for the United States Navy. July 20, 1912.

2042. Extracts from regulations and instructions in relation to the physical examination of recruits.

PHYSICAL EXAMINATION OF RECRUITS FOR ENLISTMENT IN THE NAVY AND MARINE CORPS.

2051. Whenever any person is examined physically for the Navy or Marine Corps, whether subsequently enlisted or rejected, his name and the particulars shall at once be entered on Form X (rough). This form shall be prepared for each applicant examined, whether accepted or rejected, for original or reenlistment, and will be kept for the purpose of preparing Form X. It shall be retained for ship or station files and shall be filed alphabetically, by calendar years, according to the applicant's surname, in order that information may be furnished the bureau upon request.

Be careful to strike through with ink the term not applicable to the case.

Form X shall be prepared from the Form X (rough) kept for the purpose, and will be forwarded from receiving ships, Navy and Marine Corps recruiting stations, and marine recruit depots for the quarters ending March 31, June 30, September 30, and December 31; from other ships and naval stations or yards for the year ending December 31, or when a ship is placed out of commission or a recruiting or other station closed.

A copy shall be retained for ship or station files. If there have been "No applicants," the report shall be forwarded and this fact so stated in the blank spaces opposite "Navy" and "Marine Corps."

Central recruiting stations shall include in their report the substations and traveling parties coming under their jurisdiction.

Medical officers of ships, naval stations, or yards making examinations for ships or stations to which no medical officer is assigned shall include these items in their reports.

Civilian examiners at substations of the Marine Corps will prepare and forward Form X (rough) to the central stations.

2052. In case a waiver is requested, the action will be noted on Form X (rough) after the cause of rejection, and approval of waiver shall be entered on this form, and also in the service and health records. (R 3523 (3); I 3209.)

2053. Marine recruit depots shall distinguish between "Accepted applicants" transferred from recruiting stations to the depot and those applying originally at the depot by making the proper entry in the space provided on this form.

2054. Previous Army service shall *not* be considered a reenlistment. Previous Navy or Marine Corps service shall be considered a reenlistment in the Navy, and previous Marine Corps or Naval service shall be considered a reenlistment in the Marine Corps, so far as it applies for use in the preparation of this form.

2055. The term of enlistment of all enlisted men of the Navy shall be four years, except minors over 17 and under 18 years of age, who shall be enlisted for the period of minority. Minors under 17 can not enlist in the Navy. No enlistment for special service is allowed.

2056. No minor under the age of 18 years will be enlisted without the written consent of the parent who is his legal guardian; or, if both parents are dead, of a legally appointed guardian.

Minors under but claiming to be over 18 years of age are liable, if enlisted, to punishment for fraudulent enlistment under the act of Congress approved March 3, 1893.

2057. Only such persons shall be enlisted as can reasonably be expected to remain in the service, and when enlisted must serve out the term of their enlistment, and can not be discharged prior to that time, except for cause or as otherwise provided.

2058. Every person before being enlisted must pass the physical examination prescribed in the medical instructions, and no person shall be enlisted for the naval service unless pronounced fit by the commanding and medical officers.

2059. No person other than a medical officer shall be permitted to conduct any part of a physical examination, to make any measurement, or to make any original entry on any medical record of enlistment.

2060. Every such examination must be completed according to the official forms, and shall in no case be suspended on the recognition of a disqualifying defect.

2061. Medical officers on recruiting duty shall exercise great care and thoroughness in conducting the physical examination of persons presenting themselves for enlistment. While these instructions are applicable in general to all physical examinations, they are intended to cover more particularly the examinations of applicants presenting themselves for original enlistment. While permitted to use his own discretion as to the routine of procedure, the medical officer shall make inquiry on all points indicated below: After testing the vision, color perception, and hearing, and estimating the general fitness of the applicant, his height, weight, and chest measurements may be taken and recorded, the clothing having been removed. A general inspection and regional examination is then made, as follows:

(a) The applicant, entirely nude, is to stand before the examiner, in a bright light, and present successively front, rear, and sides. (Retarded development, deformity or asymmetry of body or limbs, knock-knees, bowlegs, or flat feet, especially in minors; spinal curvatures; feebleness of constitution; strumous or other cachexia; emaciation, obesity; cutaneous or other external disease; glandular swellings or other tumors; nodes; varicosities, cicatrices; indications of medical treatment, leech bites, blister stains, seton or scarification scars; and evidences of smallpox or successful vaccination, or the administration of salvarsan.

(*b*) Applicant to present dorsal and palmar surfaces of both hands; to flex and extend every finger; to grasp with thumb and forefinger and with whole hand; to flex and extend, pronate and supinate wrists and forearms; to perform all the motions of shoulder joints, especially circumduction; to extend arms at right angles to body, and then bend elbow and touch the shoulders with the fingers; to elevate extended arms above the head, palm to palm, then dorsum to dorsum; to evert and invert the feet; to stand on tiptoe, coming down upon the heels quickly, and then lifting toes from floor; to flex each thigh alternately upon the abdomen, and, while standing on one leg, to hop; to perform all the motions of the hip joint; and to walk backward and forward slowly and at double-quick.

(*c*) Note effect of these violent exercises on the heart and lungs; observe movements of chest during prolonged inspiration and expiration; examine by percussion and auscultation front and rear. (Incipient tuberculosis, valvular disease.) Care should be taken to differentiate between organic murmurs and the functional varieties.

(*d*) With hands on the head and chin up, applicant to cough violently (relaxation of umbilical and inguinal regions; hernia; concealed venereal disease, especially beneath prepuce and within urethra; varicocele; orchitis and other abnormal conditions of testes).

(*e*) Applicant to bend body forward, with knees stiffened, feet wide apart, hands touching the floor, and nates exposed to strong light (hemorrhoids; prolapsus, fistulæ). While the applicant is stooping make firm pressure on the spinous process of each vertebra (noting spinal tenderness).

(*f*) Motions of head, neck, and lower jaw.

(*g*) Cranium and scalp (malformations, depressions, cicatrices, tinea, vermin, etc.).

(*h*) Ears (polypi; otorrhea, perforation, dullness of hearing, and degeneration stigmata).

(*i*) Mastoid region for scars or tenderness.

(*j*) Eyes (absence of ciliæ, tarsal redness, obstructed puncta, corneal opacities, adhesions of iris, defective vision, abnormal conditions of conjunctivæ, trachoma, pterygium).

(*k*) Nose (polypi; ozena; chronic nasal catarrh).

(*l*) Mouth, teeth, tongue, fauces (hypertrophied tonsils; syphilitic affections, impediments of speech, lingual scars, cleft palate, and repulsive stigmata or scars of the face, grotesque tattooing, or the expression characteristic of adenoids).

2062. No educational standard has been officially established for recruits presenting themselves for enlistment in the naval service. The regulations require, however, that a candidate shall be able to read and write and that he should possess a reasonably quick and clear understanding. His general intelligence may be estimated by his manner of answering the questions addressed to him in obtaining the data required in the health record, and any impediments of speech noted.

2063. Section 1420 of the Revised Statutes forbids the enlistment in the naval service of any intoxicated person. The evident intention of the law was not only to prevent the admission into the service of men who at the time of presenting themselves for enlistment were under the influence of alcoholic stimulants or drugs, but of those also who were of intemperate habits. A thorough inquiry should be made

into the history of any applicant in which habits of intemperance are suspected. Long indulgence in habits of intemperance will be indicated by persistent redness of the eyes, tremulousness of the hands, sluggishness of the intellect, satinlike texture of the skin of the body, an eruption upon the face, and purple blotches upon the legs. The morphine habitue is often emaciated, prematurely senile, with foul breath, contracted pupils, peculiar pallor, dry skin, and often showing multiple punctures of the skin from the needle. The habitual user of cocaine may be suspected when the applicant exhibits unusual buoyancy and mental overactivity accompanied by irrelevant volubility. Cocaine "snuffers" will usually show a characteristic hyperemia of the nasal mucous membrane. Medical officers should endeavor to eliminate the insane, vagrant, and criminal classes by a careful study of the personal characteristics of each applicant. Any doubt as to the mental stability of the applicant should determine a careful investigation directed toward his previous history.

2064. Certain defects which are frequently found associated with the physical condition in cases of reenlistment or continuous service are not necessarily causes of rejection. If deemed of sufficient importance to cause rejection, a waiver of the defects may be recommended, provided that such disabilities will not interfere with the performance of duty. Waiver is requested on "Report of Rejection," procurable from Bureau of Navigation (Form No. 54). This report shall be forwarded in all cases of physical rejection of continuous-service men. (R. 3528.) Physical infirmities incident to advanced years and long service should be carefully considered in these examinations and especially in the case of reenlistment under continuous service. Slight physical defects in those applicants who have matured are of less importance than when occurring in minors.

Physical disqualifications of a minor nature of probably temporary duration readily amenable to medical or surgical treatment should not necessarily cause rejection, if the candidate is otherwise qualified and desirable. Application will be made to the bureau for the admission to hospital of such cases as supernumeraries for treatment of such duration as may be desirable, having in view the removal of disqualifying defects and the ultimate enlistment of a candidate who is in all other respects qualified. In stating the cause of rejection in such cases ambiguous terms should be avoided and the degree of visual and auditory defects should be given. (M. and S. No. 123734.)

2065. The examining surgeon shall consider carefully the physical adaptability of the applicant in relation to the character of the duties which he may be called upon to perform. Moderate height and compact build are requisite in the ratings of fireman and coal passer. The duties pertaining to these ratings are extremely arduous, and applicants for such positions and candidates for transfer to these ratings must conform in every particular to the required physical standard. As a general rule minors should not be recommended for the ratings of fireman and coal passer.

2066. Slight physical defects in applicants who belong to the seafaring class, or in those who have had experience in military life, have less significance than they might otherwise have in the cases of recruits whose lives have been passed in occupations of a more confining and debilitating character. In the latter class of candidates the unusual and peculiar services that would necessarily be exacted

of them might develop any weakness or constitutional physical traits that existed prior to enlistment.

2067. While it is not expected that candidates for special ratings should possess the physique and endurance of those actively engaged in strictly military duties, the examining surgeon should remember that all candidates examined for the several special ratings are enlisted for the performance of all duties pertaining to the naval service ashore and afloat.

2068. The examining surgeon should consider carefully the physiognomy of the candidate. Where the applicant's face is marked by great deformity, warts, or extensive birthmarks, he shall be considered undesirable for the service and shall be rejected.

2069. The examining surgeon shall exercise the greatest care in the examination of the candidate's feet. Pronounced flat foot, loss or deformity of the large toe, or of two of the smaller toes on one or both feet, partial ankylosis of the ankles, marked callosities or ingrowing toenails, and any other defects which in the opinion of the examining surgeon may interfere with marching or prolonged sentry or deck duty shall be considered causes for rejection of the applicant.

2070. The absence of or the marked deformity of the right index finger or thumb shall cause the rejection of the applicant. The importance attached to the absence of or deformity of the left index finger or thumb will depend upon the adaptability of the applicant for his special rating, and provided that he is otherwise physically sound.

2071. In determining the weight to be attached to slight degrees of varicocele, varicose veins, and hemorrhoids, the examining surgeon shall carefully consider the age, the general physique, and the rating of the applicant. All candidates with hydrocele shall be rejected, also all candidates with varicocele when accompanied by atrophy of the testes, pain, or an evident neurotic state.

2072. Marked enlargement in either testicle or the absence of both testicles shall cause the rejection of the applicant. Applicants whose clothing exhales the odor of urine, or who present any evidences of incontinence of urine, shall be rejected. Cases of epispadias and hypospadias shall be rejected.

2073. Every recruit must have at least 20 sound teeth, and of these not less than 4 opposed incisors and 4 opposed molars; but, if otherwise qualified and desirable, a waiver may be requested in the case of a candidate not having 4 opposed incisors and 4 opposed molars.

2074. The examination for visual acuteness is of the utmost importance and shall be conducted by the medical officer with the greatest care and patience. An appreciable percentage of men are the subjects of slight visual defects, and in the cases of many of those presenting themselves for reenlistment and enlistment these defects may not be sufficiently serious to disqualify them for the naval service. The ignorance, fear, or stupidity on the part of an applicant undergoing examination should be taken into consideration by the examining surgeon, and unless the examination is conducted with care and deliberation an applicant may be rejected whose vision is really good. Slight errors on the part of the applicant, such as misreading a P or T for an F, provided the majority of the letters

or test characters are read with facility, need not be sufficient cause for rejection. The examination shall be conducted in a large well-lighted apartment, and the test cards shall be placed in a good light. The applicant stands at a distance of 20 feet, one eye being tested at a time, and the other covered by a card. Vision is to be expressed as a fraction, of which the numerator shall be the distance at which Snellen's 20-foot test can be determined and the denominator 20. Normal vision ($20/20$) for each eye, tested separately, shall be required, but in candidates who are otherwise physically sound a minimum visual acuteness of $15/20$ shall suffice. The existence of several minor defects, combined with a visual acuteness of $15/20$ in each eye, shall cause the rejection of the applicant.

2075. Color perception is to be carefully determined. The usual examination is by Holmgren's method, which may be briefly described as follows: The worsteds are placed in a pile in the center of a white surface in good daylight. The green test skein is placed aside upon the white cloth, and the person to be examined is directed to select the various shades of the same color from the pile and place them by the sides of the sample. The color blind will make mistakes in the selection of the shades; or a hesitating manner with a disposition to take the wrong shades may show a feeble chromatic sense. The purple test skein is then used. If the test with the green skein has shown the person examined to be color blind, and on the second or purple test he selects only the purple skeins, he is incompletely color blind; but if he places with the purple shades of green or gray, he is completely green blind. The red test skein need not necessarily be used, but it may be employed to confirm the diagnosis already made; for the red blind will select, to match the red skein, shades of green or brown which to the normal sense seem darker than the red, while the green blind will select the shades of green or brown which seem lighter.

2076. The organs of hearing, both the conducting apparatus (outer and middle ear) and the percipient apparatus (internal ear) must be free from disease. In testing the hearing of the applicant advantage should be taken of the absence of other sounds to make the examination. Medical officers should remember that the applicant may be totally deaf in one ear and yet may hear all ordinary conversation perfectly if the sound ear is not completely closed. Deafness may be caused by an accumulation of hardened wax, therefore an otherwise desirable recruit should have his ears well cleaned before final action is taken in his case. Hearing shall be expressed as a fraction, of which the numerator shall be the distance in inches at which the ticking of an ordinary watch can be heard, and the denominator 40. If the voice is used, hearing shall be expressed as a fraction, of which the numerator shall be the distance in feet at which the voice of the examiner can be heard and the denominator 15. The voice is a more reliable method of determining the acuteness of hearing than the watch test, as it allows for variations in hearing with the modifications produced by changes in pitch and tone. Complete deafness in either ear shall be considered a sufficient cause for rejection. Before completing the examination the medical officer shall satisfy himself of the patency of the eustachian tubes and the integrity of the tympanic membranes.

2078. In every case of rejection, the disability unfitting the applicant for service, and in other cases any abnormal condition, former grave illness, or serious injury not inconsistent with present bodily vigor shall be entered on Form X (rough).

2079. Recruits presenting themselves for enlistment in the naval service shall be rejected by the examining surgeon for any one of the following conditions:

GENERAL DISQUALIFICATIONS.

- (a) *Mental infirmities.*—Insanity, idiocy, imbecility, dementia.
- (b) *Moral infirmities.*—Intemperance in the use of stimulants or narcotics, evidence of felony, masturbation, sodomy.
- (c) *Diseases of the cerebrospinal system.*—Epilepsy, chorea, all forms of paralysis, tabes dorsalis, neuralgia, stuttering.
- (d) *Constitutional diseases.*—Feebleness of constitution (poor physique), syphilis.

SPECIAL DISQUALIFICATIONS.

(e) *The skin.*—All chronic, contagious, and parasitic diseases of the skin, extensive nevi, deep and adherent cicatrices, chronic ulcers, vermin.

(f) *The head.*—Abnormally large head; considerable deformities, the consequence of fracture; serious lesions of the skull, the consequence of complicated wounds or the operation of trephining; caries and exfoliation of the bone, injuries of cranial nerves, tinea capitis, alopecia.

(g) *The spine.*—Caries, spina bifida, lateral or angular curvatures of the cervical, dorsal, or lumbar regions; lumbar abscess, rickets, fracture and dislocation of the vertebræ, angular curvatures, including gibbosity of the anterior and posterior parts of the thorax.

(h) *The ears.*—Deafness of one or both ears, all catarrhal and purulent forms of acute and chronic otitis media, polypi and other growths or diseases of the tympanum, labyrinth, or mastoid cells; perforation of the tympanum; closure of the auditory canal, partial or complete, except from acute abscess, furuncle, or impacted cerumen; malformation or loss of the external ear and all diseases thereof, except those which are slight and nonprogressive.

(i) *The eye.*—Loss of eye, total loss of sight of either eye, conjunctival affections, including trachoma, entropion; opacities of the cornea, if covering a part of a moderately dilated pupil; pterygium, if extensive; strabismus, hydrophthalmia, exophthalmia, conical cornea, cataract, loss of crystalline lens, diseases of the lachrymal apparatus, ectropion, ptosis, incessant spasmodic motion of the lids, adhesion of the lids, large encysted tumors, abscess of the orbit, muscular asthenopia, nystagmus. Any affection of the globe of the eye or its contents; defective vision, including anomalies of accommodation and refraction; myopia, hypermetropia, if accompanied by asthenopia, astigmatism, amblyopia, glaucoma, diplopia, color blindness.

(j) *The face.*—Extensive nevi, unsightly hairy spots, extensive cicatrices on the face.

(k) *The mouth and fauces.*—Harelip, simple, double, or complicated; loss of the whole or a considerable part of either lip; unsightly

mutilation of the lips from wounds, burns, or disease; loss of the whole or part of either maxilla, ununited fractures, ankylosis, deformities of either jaw interfering with mastication or speech, loss of certain teeth, cancerous or erectile tumors, hypertrophy or atrophy of the tongue, mutilation of the tongue, adhesion of the tongue to any parts, preventing its free motion; malignant diseases of the tongue, chronic ulcerations, fissures or perforations of the hard palate, salivary or buccal and thyroglossal fistulæ, hypertrophy of the tonsils sufficient to interfere with respiration or phonation, pyorrhœa.

(*l*) *The neck*.—Goiter, adenitis of the cervical glands, tracheal openings, thyroglossal or cervical fistulæ, wry neck, chronic laryngitis, or any other disease of the larynx which would produce aphonia, stricture of the esophagus.

(*m*) *The chest*.—Malformation of the chest, or badly united fractures of ribs or sternum sufficient to interfere with respiration; caries or necrosis of ribs, deficient expansive mobility, evident predisposition to tuberculosis, chronic pneumonia, emphysema, chronic pleurisy, pleural effusions, chronic bronchitis, asthma, organic disease of the heart or large arteries, serious protracted functional derangement of the heart.

(*n*) *The abdomen*.—All chronic inflammations of the gastrointestinal tract, including diarrhea and dysentery; diseases of the liver or spleen, including those caused by malarial poisoning, ascites, obesity, dyspepsia, if confirmed; hemorrhoids, prolapsus ani, fistula in ano, considerable fissures of the anus, hernia in all situations.

(*o*) *Genito-urinary organs*.—Any acute affection of the genital organs, including gonorrhea, syphilis, and venereal sores; loss of the penis, phimosis, if complete, stricture of the urethra, loss of both testicles, undescended testicle or permanent retraction of one or both testicles, chronic disease of the testicle or epididymitis, hydrocele of the tunic and cord unless the hydrocele of the cord is small and inconsequent, atrophy of the testicle, varicocele, malformations of the genitalia, epispadias, hypospadias, but a slight degree of hypospadias not preventing the normal passage of urine may not cause rejection; incontinence or retention of urine, urinary fistulæ, enlargement of the prostate, calculus, cystitis, and all organic diseases of the kidney.

(*p*) *Affections common to both the upper and lower extremities*.—Chronic rheumatism, chronic diseases of joints or movable cartilage, old or irreducible dislocations or false joints, severe sprains, relaxation of the ligaments or capsules of joints, dislocations, fistulæ connected with joints or any part of bones, effusions into joints, badly united or nonunited fractures, defective or excessive curvature of the long bones, rickets, caries, necrosis, exostoses, atrophy or paralysis of a limb; extensive, deep, or adherent cicatrices, especially of burns, contraction or permanent retraction of a limb or portion thereof, loss of a limb or portion thereof, inequality, deformities.

(*q*) *The upper extremities*.—Fracture of the clavicle, fracture of the radius and ulna, webbed fingers, permanent flexion or extension of one or more fingers, as well as irremediable loss of motion of these parts; mutilation or loss of either thumb, total loss of the index finger of the right hand, loss of the second and third phalanges of all fingers of either hand, total loss of any two fingers of the same hand.

(*r*) *The lower extremities*.—Varicose veins, knock-knees, clubfeet, flat feet, webbed toes, the toes double or branching, the great toe

crossing the other toes, hammertoe, bunions, corns, overriding or superposition of any of the toes to an extreme degree, loss of a great toe, loss of any two toes of the same foot, permanent retraction of the last phalanx of any of the toes, or flexion at a right angle of the first phalanx of a toe upon the second, with ankylosis of the articulation; ingrowing of the nail of the great toe, bromidrosis.

2080. (a)—*Table of physical proportions for height, weight, and chest measurement of adults.*

[Bureau of Navigation Circular relating to the enlistment of men, July 20, 1912.]

Height.	Weight.	Chest (mean circum- ference).
<i>Inches.</i>	<i>Pounds.</i>	<i>Inches.</i>
64	128	33
65	130	33
66	132	33½
67	134	34
68	141	34½
69	148	34¾
70	155	35¼
71	162	36
72	169	36½
73	176	36¾

(b)—*Table of physical proportions for enlistment of Filipinos.*

Age.	Height.	Weight.	Chest measure- ment (mean).	Expansion.
18 to 19	61	105	30½	2
20 to 21	62	108	31	2¼
22 and over.	62½	110	31½	2½

2081. The minimum height for acceptance of a man 21 years old or over is 64 inches barefooted. A variation not exceeding 1 inch is permissible if the applicant is in good health and desirable as a recruit. The minimum weight for acceptance of a man 21 years old is 128 pounds. A variation of 10 pounds, not to fall below 128 pounds in weight or 2 inches in chest measurement below the standard given in the table is admissible when the applicant for enlistment is active, has firm muscles, and is evidently vigorous and healthy, except for enlistment in the rate of coal passer, for which rate full standard measurements will be required. A chest expansion of less than 2 inches in a minor, or of less than 2½ inches in an adult, is a sufficient

cause for rejection of an applicant. The table is given to show what is regarded as a fair standard of physical proportions and not as an absolute guide to be followed in deciding upon the acceptance of recruits.

2082. A minor enlisting as apprentice seaman must conform to the standards noted in the following table, which is also applicable to apprentice musicians, United States Marine Corps, and to midshipmen. (Circular of July 20, 1912.)

	Minimum height.	Minimum weight.	Chest expansion.
	<i>Inches.</i>	<i>Pounds.</i>	<i>Inches.</i>
At 17 years of age.....	62	110	2
At 18 years of age.....	64	115	2
At 19 years of age.....	64	120	2
At 20 years of age.....	64	125	2

(If the age is 6 months in excess of a full year the requirements are those of the age at the next birthday.)

(No underweight or underheight is allowed in minors.)

2083. Marked disproportion of weight over height is not a cause for rejection unless the applicant is positively obese.

2084. Any one of the following conditions will be sufficient to cause the rejection of an applicant (Bureau of Navigation Circular, 1916):

(a) Feeble constitution, general poor physique, or impaired general health.

(b) Any disease or deformity, either congenital or acquired, that would impair efficiency, such as: Weak or deranged intellect, cutaneous disease not of a mild type, parasites of the skin or its appendages, deformity of the skull, abnormal curvature of the spine, torticollis, inequality of upper or lower extremities, inefficiency of joints or limbs, deformity of joints or bones (either congenital or the result of disease or injury), evidence of epilepsy or other convulsions, defective vision (minimum 15/20 S. in either eye), disease of the eye, color blindness, impaired hearing or disease of the ear, chronic nasal catarrh, ozena, polypi, great enlargement of the tonsils, impediment of speech, disease of heart or lungs or predisposition to such disease, enlarged abdominal organs or evidence of cirrhosis, tumors, hernia, undescended testicle, large varicocele, sarcocele, hydrocele, stricture, fistula, hemorrhoids, large varicose veins, disease of the genito-urinary organs, chronic ulcers, ingrowing nails, bad corns, large bunions, deformity of toes, loss of many teeth, or teeth generally unsound (teeth properly filled not to be considered unsound). Every recruit must have at least 20 sound teeth.

(c) Any acute disease.

2085. (a) Each recruit shall be required to take the oath of allegiance, and further state that the statement he makes regarding his date of birth and previous naval or other military service is correct, and that he is not subject to fits, has no disease concealed or likely to be inherited, and has no stricture or internal piles. The examining

surgeon certifies on the service record as follows: "I certify that I have carefully examined, agreeably to the Regulations of the Navy, the above-named recruit, and find that, in my opinion, he is free from all bodily defects and mental infirmity which would in any way disqualify him from performing the duties of his rating, and that he has stated to me that he has no disease concealed or likely to be inherited."

(b) (1) On account of insufficient or inaccurate information in reports of rejection as to physical defects of applicants for enlistment, the bureau is frequently unable to determine whether such defects should be waived, and such reports are often returned for further information before recommendation can be made.

(2) When a defect is curable by minor operation, the medical examiner should so state and also whether the applicant agrees to operation if necessary.

(3) In reporting rejections for any of the following defects the bureau desires that the information as noted below be given:

(4) *Flat foot*.—Give degree of flatness, stating accurately the distance between the tubercle of the scaphoid and the line from the lower border of the internal malleolus to the lower tubercle on the head of the first metatarsus. The measurement should be taken standing with the weight of the body on that foot and when the foot is at a right angle to the leg and the second toe is on a line with the crest of the tibia. The size of the shoe should also be given. The width of the ball of the foot should be given and any tendency to talipes valgus noted.

(5) Bunions, hammertoes, corns, and ingrowing toenails should be described accurately as to location, degree, etc.

(6) *Varicocele*.—State size and indicate by small, medium, or large.

(7) *Varicose veins*.—State location, extent, and size and indicate by small, medium or large.

(8) *Hemorrhoids*.—State character and size and indicate by small, medium, or large.

(9) *Hydrocele*.—State size and indicate by small, medium, or large.

(10) *Hernia*.—State location, size, and whether incipient, incomplete, or complete. Relaxed rings only are not cause for rejection unless abdominal walls are weak or there is a decided impulse on coughing.

(11) *Deformities*.—State location, character, degree, and amount of interference with motion.

(12) *Contractures*.—State location, degree, and amount of interference with motion.

(13) *Stiff joint*.—State location, degree of flexion and extension obtainable and the strength of the part.

(14) *Defective hearing*.—State degree, giving distance by watch, by the whispered and spoken voice, stating whether he can readily hear ordinary conversation. State condition of the external canals and drums.

(15) *Defective vision*.—State defect accurately, whether due to refractive error or other disease; when practicable, giving correction by lenses.

(16) *Missing or defective teeth*.—State in detail those missing or unerupted and those defective, using diagram for that purpose. Also state whether teeth will admit of proper repair.

(17) *Deficient height or weight*.—Always state age, height, and weight.

(18) *Tachycardia*.—State cause, character, and duration, giving time during examination for applicant to recover from excitement or overexertion.

(19) *Spinal curvature*.—State location, character, and degree.

(20) *Atrophy or hypertrophy of testicle*.—State degree and cause.

2086. (a) Recruits shall be vaccinated within 24 hours after their arrival on a receiving ship or at a barracks. In case of failure the operation shall be repeated in eight days. If the second vaccination is not successful it shall be repeated at the first opportunity with a vaccine of assured potency. The only acceptable evidence of successful vaccination is a *pitted* scar following vaccination. Results of vaccination shall be recorded on the health record and reported on the quarterly report of sick.

(b) No recruit in the Navy or Marine Corps shall be transferred from a training station, receiving ship, barracks, or other rendezvous until the medical officer is satisfied that the man is protected against smallpox.

(c) Every enlisted man of the Navy or Marine Corps shall be vaccinated upon reenlisting, or extending enlistment, unless (a) he has two *pitted* vaccination scars, or (b) shows evidence of a previous attack of smallpox.

(d) Every officer should be vaccinated upon appointment immediately upon reporting at his first station for duty, and the fact entered on his health record. Revaccination should be performed at least once in every seven years thereafter unless he has two *pitted* vaccination scars, or evidence of a previous attack of smallpox. The responsibility for revaccination shall rest upon the medical officer making the annual physical examination required by I 709 (5). If it is impracticable for this medical officer to perform the vaccination, he shall notify the proper medical officer, through official channels, so that it may be carried out. The medical officer who performs the vaccination shall note the result of the vaccination on the officer's health record. (I 3211.)

2087. (a) Typhoid prophylactic shall be administered to all persons upon their first entry into the Navy or Marine Corps.

(b) It shall be administered to each enlisted man upon each subsequent enlistment, or extension of enlistment, who is under 45 years of age, or who has not had a well-defined case of typhoid fever. The medical officer making the physical examination at the time of reenlistment shall start the administration, if practicable; if not, he shall notify the proper medical officer, through official channels, so that the administration may be completed.

(c) The administration of typhoid prophylaxis should be repeated after a period of four years for all persons in the Navy or Marine Corps who are under 45 years of age, or who have not had a well-defined case of typhoid fever, and the medical officer making the annual physical examination required by Article I 709 (5) shall be responsible for its administration. If it is impracticable for him to

give the prophylactic, he shall notify the proper medical officer, through official channels, so that it may be given.

(*d*) The only acceptable evidence of administration of the prophylactic shall be the entry on the health record, signed by the medical officer. (I 3212.)

2088. Medical officers are required by act of February 16, 1914, to conduct a physical examination of men of the Naval Militia when mustered into service of the United States. (General Order No. 150, June 14, 1915.)

2089. When available, medical officers will make such examinations of members of the Naval Auxiliary Service as are prescribed in the regulations for that service.

SUPPLEMENTARY NOTES ON RECRUITING.

Whenever health records or reports of medical surveys represent a disability to have existed prior to enlistment, the fact shall be reported to the Bureau of Medicine and Surgery; and the medical officer who passed such recruit shall be held accountable for the improper enlistment. (I 3204.) The examination having been concluded, and the candidate found qualified for the service, the medical examiner shall enter his descriptive list upon the blank records furnished by the Bureau of Navigation or the commandant of the Marine Corps, and, having signed it, shall transmit the record to the commanding officer of the ship, station, rendezvous, or post. Upon the transfer at any time of an enlisted person the medical officer shall make the necessary entries upon the health records.

Relaxed inguinal rings alone should not be considered a cause for rejection, unless there is plain evidence of weakness of the abdominal walls and a decided impulse on coughing. (Par. 2085, Manual for the Medical Department, 1914.) A condition of patulous rings, however, should be noted by the medical officer, but a request for waiver is not considered necessary.

In the cases of men suffering from minor disqualifications that can be remedied by operation it is important that the candidate should state his willingness to be operated upon if the condition should later result in a disability, but this should not be interpreted to mean that the applicant should be enlisted with a view that he will be immediately operated upon for the removal of his disqualification. In the adjudication of pension claims it has been decided that disability due to an operation upon a soldier for the cure of piles by a surgeon under whose charge he was during military service is pensionable, notwithstanding that said piles existed prior to enlistment. Similar decisions have been made in the cases of other disabilities under like circumstances, where a disqualification at the time of enlistment has resulted in a later disability.

In making recommendation with regard to defective teeth it is advisable to consider the general nutrition of the applicant, and a waiver should not be requested if the applicant is markedly below the weight requirements.

External hemorrhoids should always be noted, but where the medical officer considers that they would not result in disability, waiver should be requested. In the past 10 years there have been

only 52 discharges from the service for disability on account of hemorrhoids.

It is generally believed and has been so expressed in articles written on the subject that the scaphoid tubercle is not normally depressed over one-half inch. The Bureau of Medicine and Surgery has, however, for some time considered waivers of men for enlistment in which the depression has been greater than one-half inch and the medical officer and recruiting officer considered the applicant a proper candidate for enlistment. It is not considered that the footprint, or the depression of the scaphoid tubercle, are as important in judging the degree of weak foot as the range of motion of the foot, and particularly any limitation of adduction. Statistics show that flat foot is one of the most frequent causes of disability, and in view of the act of March 3, 1885, which provides "That all applicants for pension shall be presumed to have had no disability at the time of enlistment, but such presumption may be rebutted," it is considered advisable, when the depression of the scaphoid tubercle is over one-half inch, that a note be made of this fact and a waiver requested.

The bureau considers that there are many good reasons why waivers should be requested in the cases of candidates for enlistment who fall below the table of physical proportions, not only on account of the law quoted above, but in order that the recruit depot or training station may know that the applicant's physical qualifications have been fully considered.

Varicocele of any size should be noted in the enlistment record. It is not considered advisable, under ordinary circumstances, to recommend waiver in cases where the varicocele is larger than the testicle. It has been found at recruit depots and training stations that men with large varicoceles make poor recruits; that after operation considerable induration frequently results, and the man has to be excused from drills, etc., for a large part of his time at the recruit depot or training station, often ultimately being discharged for disability.

Atrophy of one testicle should not be considered a cause for rejection, but should be noted on the enlistment record.

OPENING AND PREPARING HEALTH RECORDS.

[From chap. 13, Manual for the Medical Department.]

NAVY REGULATIONS RELATING TO HEALTH RECORDS.

- 2201.** Patients transferred to have health records. R 2961 (2); R 3585 (1)*a*.
2202. Entry to be made in health record of men examined before transfer. R 2961 (3); R 3581 (5).
2203. Date of transfer to other than a naval hospital to be noted in health record. R 2962 (1).
2204. Health records of patients left in foreign hospitals to be left with consul. R 2962 (2).
2205. Health record continued by medical officer of any ship arriving in port. R 2962 (3).
2206. Junior medical officer to keep health records. R 2977; I 3251.
2207. Not in line of duty entries on health record. R 2902 (1-5).
2208. Disabilities of men enlisted to be entered on health records. (I 3209); R 3523 (3).
2209. Accidents and injuries occurring in absence of medical officer to be noted on health record. R 4563.
2210. Disposition of health records of paymaster's clerks upon termination of appointment. R 3318 (7).

NAVAL INSTRUCTIONS RELATING TO HEALTH RECORDS.

- 2211.** Custody of officers' health records. I 708 (1).
2212. Every officer required to notify medical officer of transfer. I 708 (2).
2213. Health records to senior officer of board for physical examination. I 708 (3).
2214. Health records upon completion of examination. I 708 (4).
2215. Health records where no medical officer. I 708 (5).
2216. Officer on duty where no medical officer to furnish reports of disability. I 708 (6).
2217. Periodical physical exercises. I 709.
2218. Entries in health records indicating use of intoxicants, etc. I 707 (5).
2219. Health records to be inspected by fleet surgeon. I 1122 (2).
2220. Health records to be verified. I 2102.
2221. Health records of patients received for passage. I 2116.
2222. Medical officers shall keep health records. I 2117 (1).
2223. Completed records to go to Bureau of Medicine and Surgery. I 2117 (2).
2224. Commanding officer to inspect health records. I 2619 (2).
2225. Entries upon enlistment and transfer. I 3208 (1-2).

2226. Record of vaccination to be entered on health record. I 3211 (1).

2227. Administration of typhoid prophylaxis to be entered on health record. I 3212.

2228. Health records at hospitals to be examined weekly. I 3226.

2229. Patients upon admission to hospitals to have health records. I 3229.

2230. Health records to be signed and verified. I 3237.

2231. Care in keeping health records. I 3252.

2232. Health records to be opened upon appointment or promotion of officer. I 3257.

2233. Examination of enlisted men for rating of fireman or coal passer to be entered on health records. (Letter Nav. 2158-249, Feb. 24, 1912.)

2234. Records of physical examinations of officers for periodical physical exercise in January to be made in health records. I 709 (5); I 708 (3).

INSTRUCTIONS TO BE OBSERVED IN OPENING AND PREPARING HEALTH RECORDS.

2241. (a) The whole name (Christian, middle, and surname), to correspond with that on service record and to be legibly written out, without abbreviations, and correctly spelled, preference being given to the original spelling of foreigners' names, the surname to precede and to be distinguished by being underlined.

(b) As far as possible, on reports and returns, the grades and rates of officers and men should be spelled out in full, but where sufficient space is not provided the abbreviations in par. 2241 (b) of the manual should be used.

(c) Enter the rating in which actually enlisted.

(d) Enter the name of the place where enlisted.

(e) Enter date actually enlisted and strike out the term not to be used as not applying in the case of the man under consideration, following the date of enlistment.

(f) Enter month, day, and year of birth.

(g) Specify city, town, or other locality of birth, whatever the nationality.

(h) Enter (from recruit's statement) all former diseases and injuries.

(i) Give former occupation or occupations.

(j) For enlisted persons give the number of continuous-service certificate and years of previous service.

(k) Give name and address of nearest relative or friend.

(l) Enter religion.

(m) Eyes: Blue, gray, blue-gray, yellow-gray, hazel (light brown), dark brown, bicolored (as when the pupillary border is of a different color from rest of iris); also state when the two eyes are of different colors.

(n) Hair: Flaxen, sandy (yellowish red), auburn (reddish brown), brown (light, dark, or very dark), black; also whether thin, bald, straight, curly, or woolly.

(*o*) Complexion is not to be described as simply "light" or "dark," but the character and degree shall be as accurately stated as possible; as complexion, pallid, sallow, fair (only when decidedly clear), ruddy, florid, dark (tawny, sunburnt, or tanned), very dark (swarthy or dusky), mulatto, negro.

(*p*) Height to be expressed in inches; the body to be erect, the chin neither elevated nor depressed, the feet and knees touching, legs stiff, and arms hanging perpendicularly.

(*q*) Weight, body nude, or allowance made for clothing worn. Accuracy of scales to be ascertained before using.

(*r*) Vision to be expressed as a fraction, of which the numerator will be the distance at which Snellen's 20-foot test can be determined, and the denominator 20.

(*s*) Hearing is to be expressed as a fraction, of which the numerator will be the distance in feet a whispered voice can be heard, and the denominator 15.

(*t*) Circumference of thorax to express the mean of the greatest circumference after forced inspiration and of the least after forced expiration, measured by a tapeline horizontally at the precise level of the nipples; the difference between the greatest and least circumference to be entered as expansion.

(*u*) Teeth missing or useless shall be indicated by marking the dental formula as noted.

(*v*) Remarks: Note any prominent physical trait not inconsistent with bodily vigor or not in such degree as to constitute cause for rejection—leanness or the reverse; hirsuteness; slight asymmetry of body or limbs, knock-knees, bowlegs, or flat feet; peculiarities of teeth and genitalia; slight varicocele, etc. In this connection examiners are to remember that imperfections that might pass in a man should reject boys.

(*w*) Marks and scars should be indicated as required on the printed outline figure.

(*x*) Enter the date and nature of any waiver requested.

(*y*) Finally sign the record in the space provided. Corrections made subsequent to enlistment to be entered in red ink and initialed.

2242. This record shall be prepared for each officer and enlisted man of the Navy and Marine Corps and for members of the Nurse Corps.

IDENTIFICATION RECORDS AND FINGER PRINTS.

Identification records, consisting of finger prints and personal descriptions, will not hereafter be forwarded to the Bureau of Navigation upon the reenlistment of men if the date of last enlistment was subsequent to January 1, 1907, or upon discharge for undesirability, bad conduct, or with dishonorable discharge if enlisted subsequent to that date.

The files of finger prints, which were inaugurated January 1, 1907, are now practically complete for the term of enlistment provided by law, and in future it will only be necessary to forward finger prints and personal descriptions in the following cases:

On first enlistment.

On reenlistment from the Army or Marine Corps.

On reenlistment when date of last enlistment was prior to January 1, 1907.

Upon discharge as undesirable or with bad conduct or dishonorable discharge if the enlistment occurred prior to January 1, 1907.

In future it will only be necessary to forward identification records in the following cases to headquarters, United States Marine Corps:

Upon application for first enlistment.

Upon reenlistment from Army or Navy.

Upon reenlistment from the Marine Corps when date of last enlistment was prior to January 1, 1908.

Upon discharge as undesirable or with bad conduct or dishonorable discharge if the enlistment occurred prior to January 1, 1908.

Identification records will not hereafter be forwarded upon the reenlistment of men if the date of last enlistment was subsequent to January 1, 1908.

OUTLINE FIGURE CARD AND DESCRIPTIVE LIST.

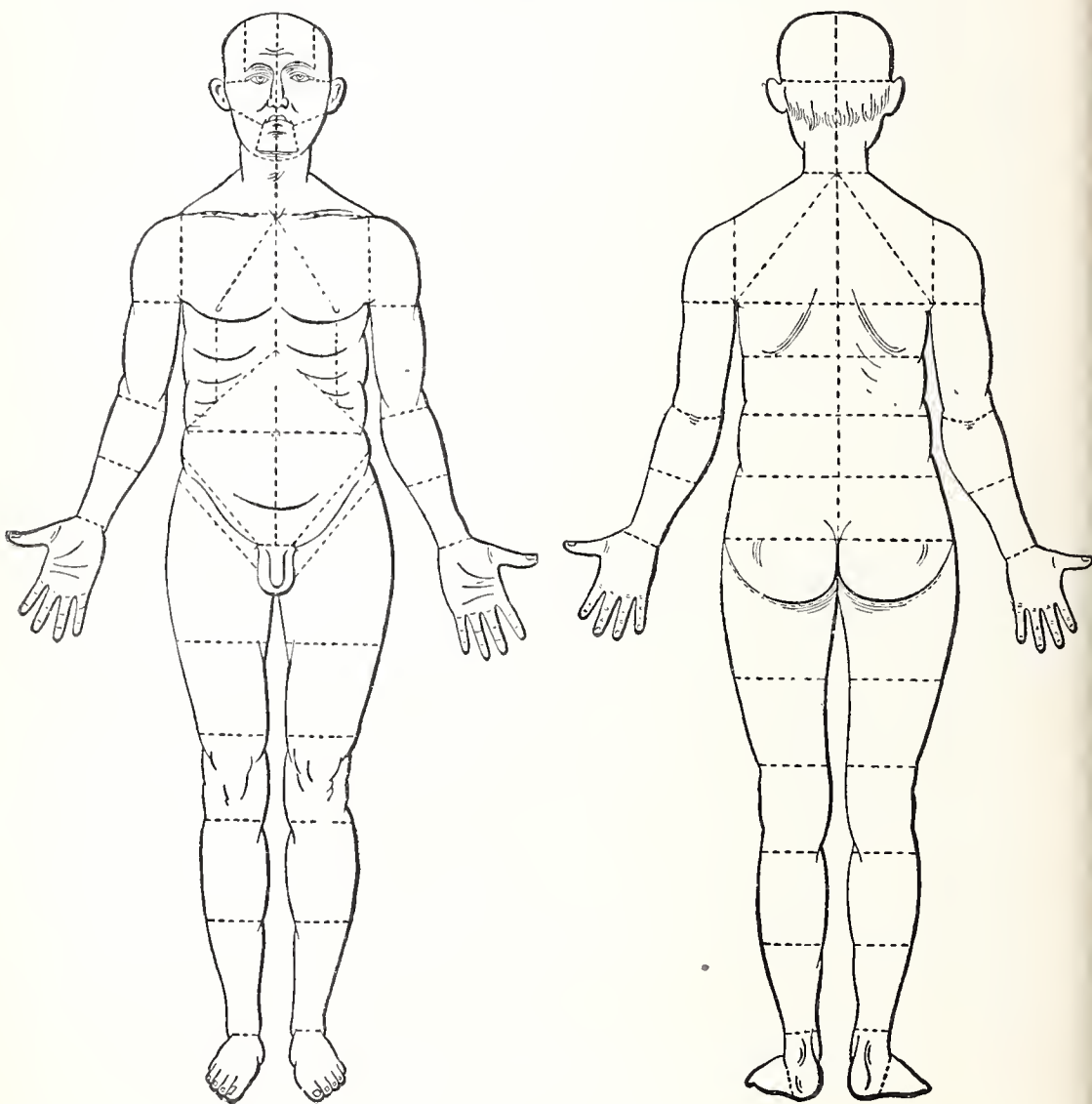
[From chap. 12, Manual for the Medical Department.]

2101. The outline figure on the reverse side of the finger-print record shall be filled out in the case of every recruit that has been found physically qualified and accepted for enlistment and for every sailor or marine who presents himself for reenlistment when date of last enlistment was prior to January 1, 1907.

2102. Medical officers on recruiting duty shall observe the greatest care in the preparation of these cards and shall exercise every care that the record on each card may be complete.

2103. The medical officer shall make a careful and systematic examination of the body of the man, front and rear, on each side of the median line, separately, commencing at the scalp and ending at the foot, and the following directions shall be carefully noted:

(a) Cards showing less than five marks in addition to vaccination scars, tattooing, loss of teeth, and deformities (which should likewise be noted) can not be relied upon in the effort to discover identity



or to identify a person in suspected cases. Experience shows that as many as 10 or 15 marks may usually be found.

(b) If no marks be found upon the recruit, the fact should be stated upon both the front and back of the card. If marks are found upon the front and none upon the rear, or vice versa, the entry "no mark" should be made upon the appropriate side of the card.

(c) Outline figure cards are to be made out in permanent black ink. Copying ink or indelible pencils should not be used.

(*d*) Name.—Christian and middle name in full and surname in the order to be used. The name should be written very plainly, or preferably typewritten or printed in plain gothic letters.

(*e*) Rate.—The rate in which recruit is enlisted shall always be stated.

(*f*) Age.—The age at the time the card is prepared is the one that shall be given.

(*g*) Height.—The height is to be given in inches, and as it is relied upon as a base in comparing the cards of recruits with the classified descriptions of the former sailors or marines, and as the measurement may to a considerable degree be affected by efforts at deception on the part of the recruit, great care in ascertaining it is enjoined.

(*h*) Hair.—The scale of hair colors may be given as follows: Flax color; light brown; of red hair, as follows: brick red, sandy red, auburn (reddish brown); dark brown; black; of gray hair, as follows: dark gray, light gray (approaching white), iron gray (mixed).

(*i*) Eyes.—The eyes should be compared by placing the subject with the face in good light. Slide the Standard Eye Chart up or down the left side of the face, close to the left eye. The nearest approach in similarity of color is the number to be given. If the right eye is distinctly different in color, its number also should be given.

(*j*) White or colored.—Write the word "white" or "colored" to indicate race as the case requires. Do not indicate by crossing out one of the words.

(*k*) Date of last prior enlistment in the Navy or Marine Corps.—If the recruit has had no prior service in the Navy or Marine Corps, write the word "none."

(*l*) Missing teeth.—To indicate the missing or useless teeth, mark with an X the letters corresponding to the teeth that are absent or useless. Teeth that are partly decayed should be indicated by drawing a diagonal line through the corresponding letters. If none are missing, write the word "no" in front or above the words "missing teeth." This will show that they were not overlooked.

(*m*) Station and date.—Write the name of the station at which the card is made out and the date of its preparation.

2104. Marks on the outline-figure card should be made at points corresponding to those occupied by the marks on the body of the recruit. This may readily be accomplished by drawing imaginary lines on the body of the recruit like the dotted lines on the card and placing the mark in the proper position on the card. As the dotted lines mark the boundaries of regions which are used in the systematic arrangement of the cards for purposes of identification, it is important that each mark on the card should be placed in its proper position.

(*a*) A pen picture is desired of all marks, showing their inclination and general shape. In the case of tattoos, this is optional.

(*b*) A straight line should be drawn from each mark to its description on the right or left of the figure. When avoidable, these lines should not cross each other.

(*c*) When a description is common to a number of marks, it need not be repeated for each one, but the lines may converge to it, if they can do so without crossing others.

(*d*) The sizes of all scars, moles, warts, birthmarks, etc., are to be given in inches or fractional parts thereof, except in the case of pinhead moles (abbreviation p. m.).

(*e*) Pinhead moles are moles less than one-eighth of an inch in diameter.

(*f*) Tattoo marks should invariably be noted and described in detail as they appear. In the case of devices composed of two or more figures, the component parts should be named, e. g., "heart, cross, and anchor," not "faith, hope, and charity"; "clasped hands," not "friendship"; "eagle, shield, crossed cannon, flags, and arrows," not "American coat of arms." The same applies to all emblems, coats of arms, lodge pins, badges, etc.

(*g*) Letters, initials, and words should be printed, by hand, in plain roman capitals or gothic, thus: "J. M. H.," "U. S. V.," "I. X. L.," "IN GOD WE TRUST," etc.

(*h*) Details of costume, posture, and relationship to other devices should be given in the case of tattooed representations of men and women, e. g., "woman clinging to a cross"; "man and woman embracing, houses, lighthouse, and ship in the background"; "sailor standing by a tombstone, weeping willow overhead, cap in right hand, words 'in memory of my mother' on stone."

(*i*) The size of tattoos need be given only in the case of dots, blotches, circles, lines, etc.

(*j*) It is not necessary to state the color or kind of pigment used in the tattooing.

(*k*) Do not crowd the description of tattoos between the right arm of the figure and the edge of the card in front, nor the left arm and edge of the card on the back.

(*l*) Indecent or obscene tattooing is cause for rejection, but the applicant should be given an opportunity to alter the design, in which event he may, if otherwise qualified, be accepted.

(*m*) Do not write on the figure. The figure is to be used only for the purpose of locating, by pen pictures, the different marks found on the body of the recruit.

(*n*) Amputations and losses of parts of fingers and toes should be noted, showing the particular member injured and how much of it is gone.

2105. The following abbreviations are authorized and will be understood in the sense indicated, viz: Amp., amputation; bl., blue; bmk., birthmark; bro., brown; d., depressed (except when following a dimension; then it stands for diameter); f., flat; fl., fleshy; h., hairy; m., mole; p., pitted; p. m. pinhead mole; r., raised; s., scar or smooth; v., vaccination; var., varicose veins or varicocele; w., wart.

(*a*) All combinations of these abbreviations are admissible, e. g., p. s. $\frac{1}{2}$ d., pitted scar one-half inch in diameter; s. 1, scar 1 inch long; f. p. s. $1 \times \frac{1}{2}$, an oval, flat, pitted scar, 1 inch long and $\frac{1}{2}$ inch wide.

(*b*) Abbreviations denoting shape are unnecessary, for the letter "d" following a dimension shows that the mark is circular. Two dimensions given indicate that the mark is oval or oblong, and when no letter follows the dimension it is understood that the mark or scar is linear.

(c) When a linear mark or scar is otherwise than straight the length to be given is the shortest distance from one extreme to the other.

(d) The letters "T. M." should not be used as abbreviations for "Tattoo marks," as they are liable to be taken for tattooed letters on the person.

FINGER PRINTS.

The apparatus for taking finger prints consists of a form holder, an ink plate, and a roller for spreading the ink on the plate.

Keep the roller and ink plate clean and free from dust, grit, or hairs, and the ink tube closed when not in use. When the day's work is finished, clean the ink from the plate and roller by means of a cloth and benzine. When not using the roller, rub it with a little sweet oil or lubricating oil before laying it away, to prevent the composition from becoming too hard.

Preparatory to taking finger prints squeeze a *small quantity of ink* from the tube and carefully work it, by use of the roller, into a thin film on the plate, the spreading of which may be facilitated by frequently turning over the roller. *If too much ink is used, the impression will be blurred and consequently unsatisfactory.* The thickness of the ink after being spread on the plate should be less than one-half the elevation of the ridges, and this can be tested by taking impressions.

The recruit should wash his hands thoroughly with soap and brush, using, if practicable, running water, especial care then being taken to rinse off all soap or lather with cold water. (Fig. 1.) Failure to do this will cause white blotches to appear in the impressions. Immediately before placing the fingers on the inked plate the fingers should be well wiped with a cloth dampened with benzine or ether, which should remove all trace of grease, water, or perspiration.

Two kinds of impressions are used, "plain" and "rolled." A plain impression is obtained by pressing the bulb of the finger, with the plane of the nail parallel to the plane of the plate, on the inked plate and then on the paper in the same manner. A rolled impression is obtained by placing the side of the finger on the inked plate, with the plane of the nail at right angles to the plane of the plate, and rolling the finger over from one side to the other until the plane of the nail is again at right angles to the plane of the plate, but with the bulb surface of the finger facing in the opposite direction, thus inking the surface of the finger, and then rolling the finger over the paper in the same manner, in this way obtaining a clear impression of the ridges on the surface of the finger. This latter impression should include both the palmar surface and the sides of the finger between the tip and the flexure of the last joint. Always roll the fingers from the awkward position to the natural position. (Figs. 3, 4, and 5.)

It is absolutely necessary that the finger prints shall be clear, that the ridges shall be distinctly outlined, and that the "rolled" impressions shall be sufficiently large to include all the points needed for accurate classification, and free from blur. Black impressions are better than light ones if the spaces between the ridges are free from blur.

When the skin of the fingers is in poor condition, make special effort to get best results.

Entire palmar surface of first joint should be inked so that whole contour of pattern will be shown when finger is rolled.

Recruit should first be required to sign his name, and then to roll the impression of the right index finger in the space above his signature. This will eliminate entirely the possibility of the recruit signing other than his own identification record. Have only one recruit at a time present in the room where prints are being made, and complete and file each record before the next man enters or is taken up. In this way no other record than the one in question is available or within reach of the recruit being recorded, therefore he can sign no record but his own. Do not allow records to lie around, but file or otherwise dispose of them at once after completing examination.

In taking impressions, the operator himself should manipulate the hands of the recruit, who should be directed to relax his fingers and not to attempt to assist by adding to the pressure on the inked plate or on the paper. In order that the ink may be taken up on the finger evenly and in sufficient quantity, an unused part of the plate should be selected each time for inking the finger, and when no unused part of the plate remains the ink should be redistributed with the roller or the plate reinked. See that there are no clots of ink where the fingers are to be rolled on the plate.

The form holder, which is intended to prevent the form from moving about and blurring the print while impressions are being taken, will be used. The best results will be obtained with a table that places the form holder at about the height of the elbow of the recruit when he is standing with his arms hanging at his sides. To place a form in the holder, press out the plate by means of the levers at the ends, place the form in position under the plate, and push back the levers to their original position. The pressure of the springs on the plate will hold the form firmly in position.

To record the finger prints on Bureau of Navigation Form No. 2 and United States Marine Corps Form N. M. C. 330, place one of the blank forms in the holder (Fig. 2), with the upper heavy black line appearing just above the upper edge of the plate; then take the rolled impressions, in the order named and in proper spaces on the form, of the thumb, index, middle, ring, and little fingers of the right



FIG. 1.—Scrubbing hands preliminary to inking fingers.



FIG. 3.—Beginning a rolled impression.



FIG. 4.—Rolled impression half completed.



FIG. 5.—End of rolled impression.



FIG. 6.—Making plain impression of fingers.

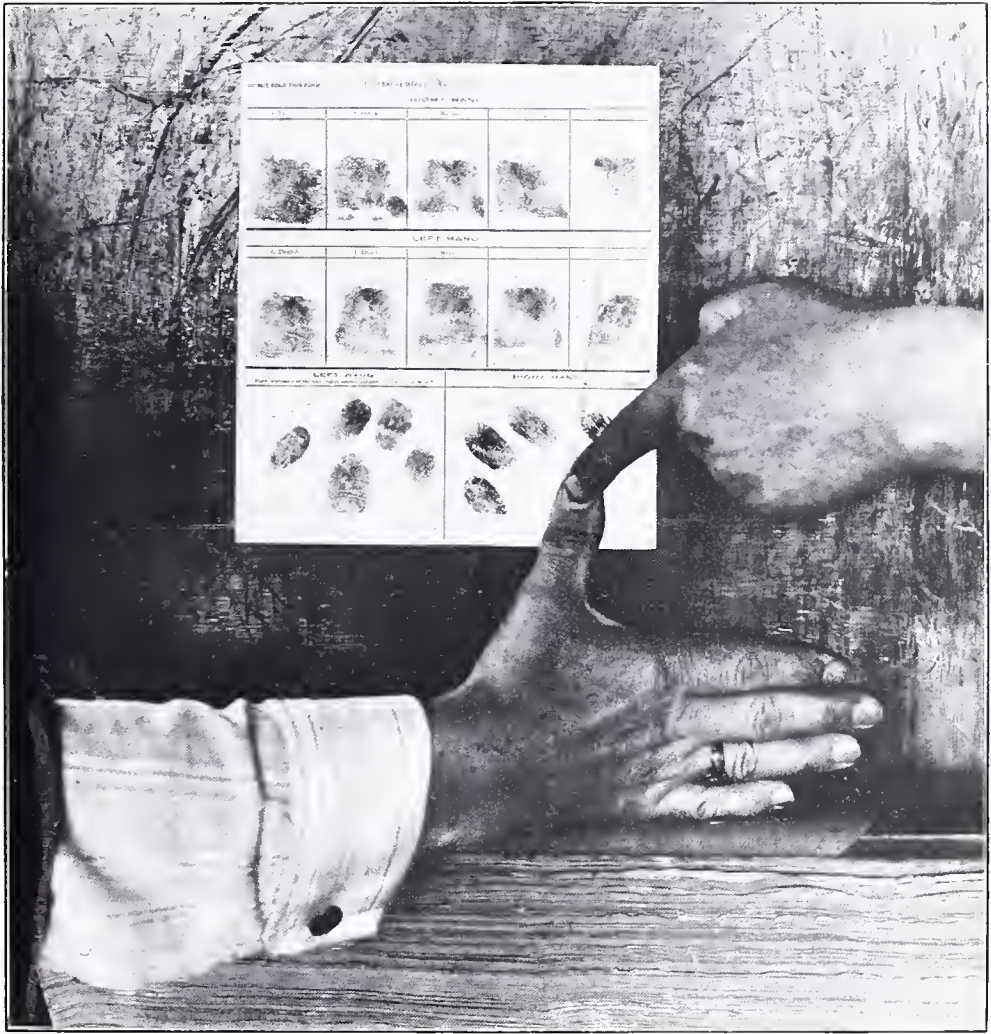


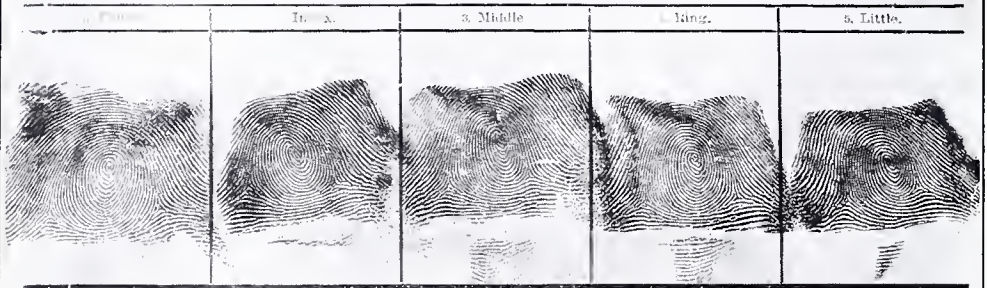
FIG. 7.—Making plain impression of thumb.

DO NOT OLE THIS FORM.

Classification No.

4-1128

RIGHT HAND.



LEFT HAND.



LEFT HAND.

Plain impression of the four fingers taken simultaneously and of the thumb.



RIGHT HAND.

Plain impression of the four fingers taken simultaneously and of the thumb.



FIG. 8.—Properly made record.

(Type of finger (left and))
 Rolled print of right index finger, for use in case of difficulty in making any other print to be in case.
 (Signature of person)
 (F. S. S.)

Name of person: *William J. Smith*
 Date of birth: *March 15, 1893*
 Record made by: *W. J. Smith*
 Location of record at: *Surgeon, U. S. A.*
 Age: *19*
 Height: *5 ft. 10 in.*
 Previous record made: *yes*
 Date of last record: *with military record and for-warded*
 (Signature of recording officer)

FIG. 9.—Face of the record. Poor index print. Marks on outline figure give no dimensions.

DO NOT FOLD THIS FORM. Classification No. _____

RIGHT HAND.

1. Thumb.	2. Index.	3. Middle.	4. Ring.	5. Little.

LEFT HAND.

6. Thumb.	7. Index.	8. Middle.	9. Ring.	10. Little.

LEFT HAND. Plain impressions of the four fingers taken simultaneously and of the thumb.

RIGHT HAND. Plain impressions of the four fingers taken simultaneously and of the thumb.

FIG. 10.—Imperfect record. Useless for classification.

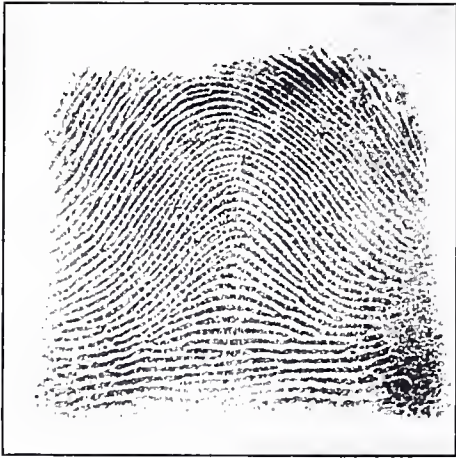


FIG. 11.—Arch.



FIG. 12.—Tented arch.



FIG. 13.—Radial loop, right hand, or ulnar loop, left hand.

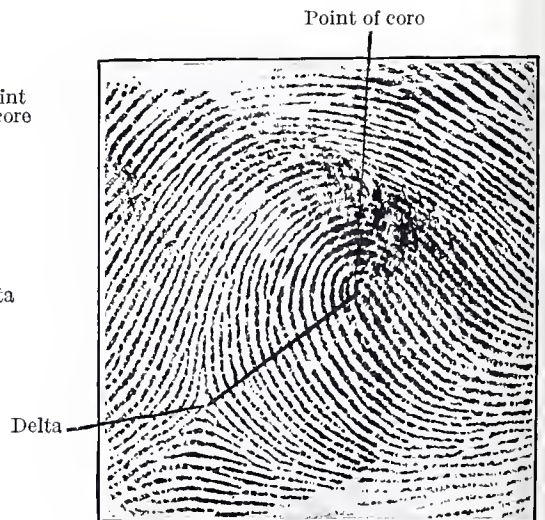


FIG. 14.—Ulnar loop, right hand, or radial loop, left hand.

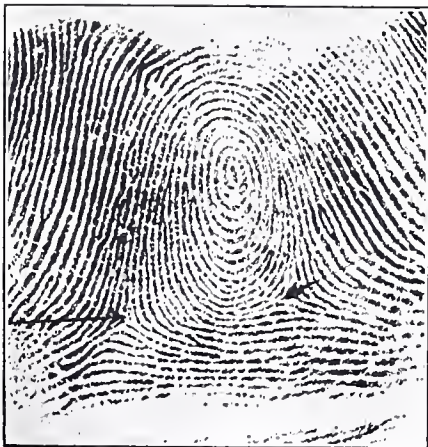


FIG. 15.—Whorl. (2 deltas.)



FIG. 16.—Composite. (2 deltas.)



FIG. 17.—Ulnar loop (right hand), showing 65 points of identification.

DO NOT FOLD THIS FORM.					Classification No.				
					RIGHT HAND.				
1. Thumb.		2. Index.		3. Middle.		4. Ring.		5. Little.	
		1. 		2. 					
LEFT HAND.									
6. Thumb.		7. Index.		8. Middle.		9. Ring.		10. Little.	
		3. 		4. 					
LEFT HAND.					RIGHT HAND.				
Plain impression of the four fingers taken simultaneously and of the thumb.					Plain impression of the four fingers taken simultaneously and of the thumb.				

FIG. 18.—1, Whorl improperly rolled, showing only one delta; 2, same finger properly rolled; 3, loop properly rolled; 4, same finger improperly rolled.

hand, the impressions to be located on the form so that the flexure of the last joint is immediately above the folding line. This will leave room for a second print to be taken in the upper part of the space in case the first print is defective.

After the impressions of the fingers of the right hand have been taken, move the form in the holder until the lower heavy black line appears just above the edge of the plate; then take the rolled impressions of the fingers of the left hand in the proper spaces on the form.

After the rolled impression of each finger of both hands has been obtained, again move up the form in the holder until the plate covers only enough of the lower edge of the form (not exceeding one-fourth inch) to hold it in place. Then take a plain impression of the four fingers of the right hand at one time, the fingers being held together so as to bring the prints within the allotted space, and a similar plain impression of the fingers of the left hand. Below the finger impressions take a plain impression of each thumb.

The method of obtaining the plain impressions is to take each of the fingers in turn and place the *bulbs only* on the inked plate. When this is done, press the recruit's fingers together, and with his hand limp and flat (not bowed or arched) place it in the space shown on the form and press each finger at the base of the nail, lightly. No attention need be paid to the deltas in the plain simultaneous impressions, but the detail must be clearly defined. These impressions are used to determine if the rolled impressions are in their proper sequence. (Figs. 6 and 7.)

A finger should not be noted missing if any portion of it beyond the flexure of the terminal joint remains. The end of a mutilated finger should, in all cases, be inked and recorded as in the case of a perfect digit.

Figure 10 shows impressions improperly taken. This record is so blurred that it is impossible to classify the impressions, and consequently is of no value.

No amount of pressure by the operator should be used in making or inking rolled impressions. It is the pressure that causes the ink to more readily run in between the ridges. The finger tips should be allowed to touch the paper only with sufficient pressure to make a record.

Figure 8 represents the only standard which is satisfactory and it is desired that no record be forwarded which is not up to the standard.

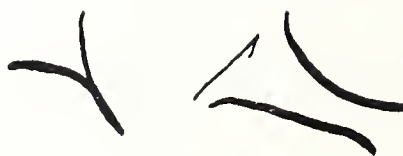
The utmost care should be taken in recording the impressions of the little fingers. From these fingers a subclassification number is obtained.

When the finger-print side of the form has been completed, the impressions will be inspected to make sure that they are clear and free from blur; that all deltas are shown in the rolled impressions, and that the whole contour of the pattern is shown. The rolled impressions will also be compared with the plain impressions for the purpose of ascertaining whether they are recorded in proper sequence. Any defective impressions will then be remedied by taking another print in the upper part of the proper space or by using a new form, if necessary. If the impressions are not recorded in proper sequence, a new form must be used, the old one being destroyed.

After the finger prints have been taken and examined, the opposite side of the form will be filled out and the personal description completed by noting on the outline figures the principal identification marks.

Before making the entries on the personal description side of the blank, allow the ink on the finger-print side to become sufficiently dry to prevent blurring by rubbing. A few minutes will be sufficient if the form is handled carefully and not rubbed about on the desk while the personal description is being entered. A sheet of blotting paper placed under the form will protect it to some extent. If an impression becomes blurred at any time, a new impression must be taken in the upper part of the proper space, or, if necessary, the imperfect form should be destroyed and a new blank used.

A delta may be formed by the bifurcation of a single ridge or by the abrupt divergence of two ridges that hitherto had run side by side, thus:



The core of a loop may consist either of an even or uneven number of ridges not joined together, thus:



Arches.—In arches the ridges run from one side to the other, making no backward turn. Arches have no deltas. (Fig. 11.)

Tented arches.—In patterns of the arch type the ridges near the middle may have an upward thrust, arranging themselves, as it were, on both sides of a spine or axis, toward which adjoining ridges converge. The ridges thus converging give to the pattern the appear-

ance of a tent in outline, hence the name tented arch. Tented arches have no deltas. (Fig. 12.)

In loops some of the ridges make a backward turn but without twist; there is one delta. If the downward slope of the ridges about the core is from the direction of the little finger toward that of the thumb it is a radial loop. Figure 13 is a radial loop in the right hand. The heavy black line drawn from the delta to the core indicates the ridges that are counted in classifying loops. In this impression the line cuts or crosses 16 ridges. If the downward slope of the ridges about the core is from the thumb side toward the little finger the loop is ulnar. Figure 14 is an ulnar loop in the right hand or a radial loop in the left hand. In this impression the heavy black line crosses 19 ridges. Be sure that the delta is shown if the impression is a loop.

Whorls.—In whorls some of the ridges make a turn through at least one complete circuit. There are two deltas. Whorls are single cored or double cored. (Fig. 15.) The right and left deltas in this impression are shown by the arrowheads. The deltas in whorls must always be shown, in order that the tracings may be properly made. In whorls the ridge traced starts from the left delta and is traced toward the right delta. When the ridge whose course is traced meets the corresponding right delta ridge the whorl is specialized as M; when this ridge goes inside of the right delta with three or more ridges intervening it is specialized as I; when the ridge traced goes outside of the right delta with three or more ridges intervening it is specialized as O.

Figure 16 is a composite. This pattern is classed as a whorl and has two deltas. The right and left deltas in this impression are shown by the arrowheads.

Figure 17 shows ridge characteristics used in establishing the identity of a person. Unless an impression is free from blur great difficulty is encountered in picking out the points of comparison between two impressions. Sixty-five points of comparison are shown on this impression which are free from blur and could all be used for purposes of comparison and identification with another print of the same individual.

Figure 18 (1) shows a whorl improperly rolled, with only one delta showing. It is impossible to make a correct tracing of a pattern rolled in this manner. Figure 18 (2) shows the same impression properly rolled.

Figure 18 (4) shows a loop improperly rolled, with the delta missing. The space between the delta and point of core in loops must be plainly shown and free from blur. This pattern is of no value and can not be properly classified. Figure 18 (3) shows the same pattern properly rolled.

Each operator should instruct his relief in the taking of finger prints, so that the Bureau of Navigation and Marine Headquarters will be able to receive good finger-print impressions at all times.

The skin on the finger tips of the bodies of men which have been recovered from the water will be greatly wrinkled or shriveled, so that without some treatment the making of satisfactory prints may be difficult and even impossible. The way to overcome this is to inject water with a hypodermic syringe beneath the skin of the bulb of the finger. This will smooth out the skin for the impression.

HINTS FOR THE INEXPERIENCED IN NAVAL OR MARINE RECRUITING, ESPECIALLY THOSE EXAMINERS WITHOUT EXPERIENCE AT SEA.

[These notes are not to be considered as in any way superseding the Navy Regulations and Naval Instructions, or the instructions in the Manual for the Medical Department.]

"The health of a navy is primarily in the hands of the medical officers at the recruiting stations."—GATEWOOD.

The recruiting surgeon stands at the door, and none enters unless pronounced physically fit.

Your duty is to safeguard the interests of both the service and the candidate. You should be of an open mind, and not allow either a sudden dislike or sympathy to affect the impartiality of your judgment.

A fixed routine of examination should be early established and rigidly followed, as this prevents confusion, saves time, and is the only way to insure a complete examination.

A good plan is to have a strong light with a reflector so arranged that it will throw a cone of bright light on the candidate, allowing the examiner to stand in the shadow.

Common varieties of attempted fraudulent enlistment which the examining surgeon should keep in mind:

- (a) Age falsely sworn with intent to deceive.
- (b) Men who have been previously rejected physically by the naval or other military service and who deny the fact.
- (c) Deserters or men with dishonorable or medical discharges who deny the fact. These men usually give an assumed name.

The recruiting line officer will be vigilant in detecting these frauds, but the medical officer should be on the alert for them also, and he has many opportunities for detection that are not open to the recruiting officer. A fraudulent enlistment is almost certain to be followed by detection, and entails a loss of time and money to the Government. Even if undetected, most of this class of recruits will prove worthless, with the possible exception of the boy who lies about his age in order to pass the minimum legal age limit. And perhaps even in his case his relatives will turn up and demand the annulling of his enlistment.

A man who has previously had a thorough physical examination will often betray a familiarity with the routine. In inspecting the anal region, if such a candidate be told to present his back to the

examiner and stoop over, he will often pull his buttocks apart without further instruction. Then, if asked in a casual voice, "Where were you examined before?" he may be caught off his guard and admit a previous examination. With his back to you, say in a tone of command, "Turn around." If he does an "about face," the inference is obvious.

The command to draw back the foreskin will frequently be followed by milking the urethra by the sophisticated.

"Head" is a shipboard term for toilet. If a man is asked how long since he was at the head, and he understands it, he has probably been to sea, and in the Navy. Of course, he may have heard it from some naval relative or friend.

An explanation of the infallibility of finger-print identification, and a display of careful plotting of marks of identification may be followed by a sudden withdrawal of the candidate. If a candidate requests permission to leave for a moment before being sworn in, don't expect him back. Sometimes at an inland station a man will try to enlist in order to obtain free transportation to the coast. Examiners on Marine Corps recruiting duty should be especially careful, as marine recruits are not sworn in until they reach the recruit depot.

Tattooing.—Ninety-five per cent of the men who enlist in the Navy fraudulently by concealing previous military service that is discoverable are tattooed in a manner characteristic of the naval or military service.

This fact has been demonstrated by a close observation of the records for the last five years in the identification office of the Navy. As a result, it has been found that men with certain tattoo marks will almost invariably be identified as having served previous enlistments in some branch of the military service. A list of the tell tale tattooing follows:

Shoulders tattooed with female heads or figures, birds, animals, grotesque figures, butterflies, and stars.

Butterflies on any part of the body.

Eagle and globe.

"C. A. C.," "U. S. N.," "U. S. A.," and "U. S. M. C."

"Death before dishonor," "In memory of my mother," "In memory of my father."

Tombstone and weeping willow.

Pig tattooed on foot. (In olden times it was believed by sailors that if they had a pig tattooed upon the instep of the left foot it would be impossible to drown.)

Men who have "Manila, P. I.," or the name of any foreign port tattooed on their person have invariably been found to have had military service.

Sailor's head.

Eagle and shield.

Crossed guns.

Apprentice knot (figure of eight).

Star or other marks over umbilicus.

Tattooing on penis.

Tattooing below waist.

Obscene tattooing.

Tattooing on buttocks.

Designs such as dragons, flowers, butterflies, animals, and Japanese women are used almost exclusively by the tattooer in the Orient.

Applicants for enlistment who are tattooed in the above-named manner should not be enlisted until finger prints have been forwarded to the Bureau of Navigation to determine whether they have had prior service. Such men will apply in most cases for enlistment in the ratings of coal passer, fireman, ship's cook, baker, seaman, and ordinary seaman.

An obviously altered tattoo mark should cause suspicion. The identification experts in the Bureau of Navigation have found that tattoo marks, especially butterflies, on the shoulders are more distinctively naval in origin than any other. Extensive tattooing does not necessarily indicate a naval or even a maritime experience, but even though he be cleared of suspicion as a "repeater," the young idler who has his skin covered with tattooing is often an undesirable frequenter of saloons and dives.

When the examination is nearly completed and the confidence of the suspected candidate has been won by kindly treatment and friendly conversation, he will be off his guard, and inquiries as to birthplace, age, previous residence, previous illness, family history, etc., may elicit a truthful answer where a false statement was made before.

Get an actual chest measure, without exaggeration due to muscular action and posture. Check up your tape, measuring rod, and scales frequently. The tape stretches, and sometimes a measuring rod will become bent, and show as much as a half-inch error.

Do not depend upon milking the urethra. Have the man urinate in your presence. Many are sophisticated enough to urinate just before examination. Examine the underclothing for pus. If the meatus is red keep them in the office long enough to show whether there is suppuration.

Identification.—Be careful to mark the missing teeth correctly. The space left by a tooth extracted during childhood may be entirely obliterated by a lateral movement of neighboring teeth, creating a

gap at another place. Be sure you understand the nomenclature in recording complexion, eyes, and hair.

Get as many well-defined marks of identification as possible, and plot and record them accurately. Careful search will nearly always reveal at least five marks. Many descriptive lists are worthless as a means of identification. Scars about knees should, of course, be recorded, but they are so common as to be of but little value as identification. The same may be said of vaccination scars.

Temperature.—In cases where the skin feels unduly warm the temperature should, of course, be taken. A fact noted by recruiting surgeons is that applicants very frequently display a slight elevation of temperature, as high as 99.6° , with no discoverable cause, unless it be due to nervousness or excitement. According to some authorities this may be a normal temperature in some individuals, with a maximum normal diurnal range of 1.8° F. In these cases, if the man is otherwise desirable, he should be allowed to dress and sent to the outer office to talk to the men, or on some trivial errand, so that he regains his composure, and the temperature be taken again after two hours, or on the following day. If the diurnal maximum remains high, be cautious.

In case of a disability which may be temporary, such as bronchitis, or insufficient weight, encourage the man to return again, and perhaps offer him advice as to how to overcome the defect. It has been found that the bronchitis of cotton-mill workers does not clear up. Many applicants are below weight simply because of insufficient nourishment. In many cities the aid of charitable organizations may be obtained for these men in the way of obtaining temporary employment or food and shelter.

If you have reason to inquire about possible symptoms, do not say "Do you feel so-and-so?", but ask leading questions, as if the possession of such symptoms were a matter of course, as "How many times do you get up at night to urinate?", "How much weight have you lost?", "How much do your ears discharge?"

In cases where it is possible to remove disqualifications by surgical means, in many cities arrangements can be made with local hospitals to admit these cases for early operation upon a note or card from the examining surgeon. There may be retired naval medical officers or Medical Reserve Corps officers in the vicinity who practice a specialty or are connected with hospitals who could be of assistance in this respect. In any case, make it clear to the candidate that enlistment can not be guaranteed after the operation. Inform applicant of probable time of convalescence and time before he could be enlisted if operation proves a success. Capable dentists may be found who would do work for a reduced fee to remove disqualifications. A local hospital may be found to make laboratory examinations.

It sometimes happens that an examiner will become impressed by some particular defect, especially if some recruit passed by him was later invalided for that defect, and will get into the habit of being too exacting concerning it.

Try to get the strong, active men. Many will have no organic defects and may be able to squeeze past the height and weight requirements, and still not be nearly as desirable physically as another who may be robust and vigorous, but has some minor disqualification, which might be waived by the department. As an instance, relaxed external inguinal rings should not be too severely considered.

When a report or survey is sent to the recruiting surgeon, he should profit by the knowledge gained, but he should not allow it to make him too timid. It does not necessarily indicate implied inefficiency or carelessness, except, of course, in the case of some such obvious defect as an ankylosed joint or grossly defective vision or hearing.

If a man gives Arizona, Colorado, or other well-known locality for tuberculous invalids as a previous residence, be especially careful in the chest examination.

The attitudes of the candidate, and of the same man after he becomes a recruit, may be diametrically opposed. The shiftless, lazy individual while being examined for enlistment will endeavor to conceal the same defect that he may be exaggerating in a short time, after he has become tired of a regulated life and of regular work. The pinch of winter or of hard times will diminish the rheumatic twinges or sharpen the hearing at the recruiting station, but the advent of spring and the lure of the road will have an opposite effect upon the same man after he has become a coal passer.

Do not forget that your candidate is undergoing an experience probably unique to him, and his embarrassment and desire to appear self-possessed may cause him to appear surly and flippant, when such traits may ordinarily be foreign to his disposition. A candidate treated with kindness and consideration becomes an aid to recruiting, whether accepted or not, and will be the cause of other applications being made, and it takes a great many applications to furnish the needed good material. Be searching in your examination, but patient and considerate.

The regulations prescribe that a man shall be examined only when clean and sober. If he is drunk, he should not be examined, then or subsequently, as he is undesirable. If his body is unclean, the circumstances should be taken into consideration, as they may be beyond his control. Some of these men come long distances to reach the recruiting station, and many have had to travel without money, riding on freight trains, sleeping in haystacks, and cleanliness may have been impossible, especially in cold weather. Unless a man shows signs of long-continued dirt, and is unashamed of it, he may

not be undesirable. The most unclean man may be desirable, if he voluntarily apologizes and can give an acceptable explanation.

In many cities inquiry will usually reveal some place to which a man may be sent for a free bath, if there are no bathing facilities in the recruiting office.

The examination of the skulls of men with long hair should be careful. A most marked asymmetry, or depression, or extensive postoperative scar may be concealed by the hair.

Real bromidrosis is a sufficient cause for rejection. Aboard ship the men sleep very near each other, head to feet, sometimes in a close atmosphere, and the man with ill-smelling feet will be a general nuisance, and will be made miserable himself by his neighbors' wrath.

Heart murmurs.—If after careful examination you are convinced that a murmur is functional, do not hesitate to recommend a waiver if the candidate is otherwise sound.

Hearing test.—Use whispered voice, with residual air. Use numbers instead of sentences, as one or two words heard may enable the candidate to guess at the others in a sentence. Many recruiting stations will not afford a room of sufficient size and quietness to make an accurate voice test. In such case, if a room is available where the watch test may be more accurately applied, this should be used, but the change should be indicated on the record. The watch used as the standard at the Naval Academy, at 40 inches, is the Ingersoll-Trenton.

It is easier to deceive the examiner in the watch test than with the voice. The eyes must be kept carefully covered, and the candidate should not be allowed to cover his own eyes. Of course, the briefest, most indirect glance will suffice to inform the man whether he should hear the watch. The movement of the examiner's arm as he raises and lowers the watch may be perceptible to the candidate through friction of clothing, etc., and enable him with luck to make three or four accurate guesses. It is better not to ask "Do you hear it now?" every time you move the watch, but better have him tell you the instant he hears it or loses it. Do not be too brief, as even random guesses may hit the mark two or three times in succession.

Some examiners use two watches, one ticking and the other silent. In this case the eyes need not be covered, and the test becomes also one of veracity.

A man may be confused by the ticking of his own watch.

If you use the voice test, try your voice on a person with known good hearing, as it may be indistinct.

Always use a speculum in examining ears. Get a clear view of the eardrum in every case. During the 10-year period 1905–1914 middle-ear disease ranked seventh in frequency as a cause for medical discharge.

Vision test.—Look out for the peeper. See that the eye not being tested is thoroughly and continuously covered. Do not let the candidate cover his own eye. Cover the unused eye with something which does not touch the eye, as the pressure of a towel may blur a good vision. Have a card with a slot only large enough to show five or six letters of the test card. Be careful that the margins of the opening do not cast a shadow on the type. To be sure of uniformly good illumination it is best to have a 32-candlepower light, with reflector, above the card.

The Grow cards are recommended for several reasons:

These cards all have a uniform type, fulfilling Snellen's principle, while the ordinary commercial Snellen's cards in this country show a wide divergence in size and shape of letters.

The greater number of letters makes possible many more combinations, with less chance of deception.

The ordinary Snellen card with large letters at the top gives a cue to the candidate who may have memorized that card.

Be thorough in the examination of the eye. Trachoma is more prevalent in this country than is generally believed, as shown by a survey made by the United States Public Health and Marine-Hospital Service in certain sections of the South.

Beware the "weak sister" of effeminate mannerisms. He will probably sink under the fire of his shipmates' raillery and sarcasm. The sailor man is unmerciful in his jibes at a man so unfortunate as to possess any marked peculiarities, either of person or manner. For the same reason the candidate with huge, outstanding ears or other very prominent features should cause reflection, unless he possesses the physical size and disposition to enforce respect.

Drug habits.—Always look for the hyperemia or ulceration of the nasal mucosa due to cocaine or heroin snuffing, and marks of needle punctures in the skin.

Every recruiting station has a laudable ambition to secure as high a percentage of recruits as possible, but the medical examiner should not allow this desire to interfere with his judgment.

Extracts from "Weak Foot," by Surg. R. C. Holcomb, United States Navy, reproduced from United States Naval Medical Bulletin:

Weak foot, commonly called pes planus, flat foot, and splay foot, is a frequent cause for rejection of applicants for enlistment in the Army and Navy. The condition is of sufficient importance for a careful examination into the subject with a view to determining its full significance, not only as a cause for rejection among applicants for enlistment but also as a cause of disability.

The Navy statistics for weak foot or flat foot as a cause for rejection are not available before 1912. For this year, however, out of a total of 78,180 applicants for enlistment 4,534, or 57.99 per 1,000, were rejected on account of flat foot. In 1914 the ratio was 108 per 1,000, and in 1915 it was 79 per 1,000.

Bearing in mind the normal low arch in savage races, the diagnosis of weak foot must be judged not only by the appearance of the foot but largely from its function. The main symptoms as pointed out by Whitman (Orthopedic Surgery) group under the following heads:

1. Attitude.
2. Distribution of weight and strain.
3. Contour.
4. Height of arch.
5. Bearing surface.
6. Range of motion.
7. Pain.

Attitude.—(a) The heel walk; (b) exaggerated turning out of the foot. These two symptoms are not of necessity early symptoms. The cause of the heel walk with its tendency to take the weight off the arch of the foot is not alone the result of the weakness, but also an effort to ease the arch. The exaggerated turning out of the foot needs little comment. * * * A weakness of the structures which tie the arch would result in the sinking of the astragalus and its wedging more deeply between the articular surface of the calcaneum and navicular, thus turning the anterior structure outward. There is also an effort of the individual to ease the inner arch by throwing as much weight as possible on the outer arch of the foot. Have the patient walk and note, if the foot is properly used, whether the great toe points to the median line or turns away. Note where the line of the tibia falls, whether over the second toe or inside the great toe.

Distribution of weight and strain.—(a) Examine shoe.

(1) Observe signs of bulging inward at the arch (look for the impress of mechanical arches, or the clean area in contrast with the rest of the lining in those who have worn arches).

(2) Observe wearing away of the inner sole of the shoe.

(b) Compare the shoe with the bare foot.

The wearing of the heel and sole of the shoes, and the misshape, a result of strain on the uppers, are valuable bits of evidence which will show in a good measure the strength or weakness of the foot that has been incased within the shoe.

Contour.—With the applicant standing, observe the feet placed side by side, the two internal malleoli and the metatarso-phalangeal joints touching. In normal feet a slight interval remains between them due to the concavity along the inner border. In weak feet the concavity is replaced by a convexity and an attempt at adduction is accompanied by an inturning of the patellæ and crests of the tibia. According to Whitman, "this change of contour is the earliest and sometimes the only evidence of weakness."

Height of the arch.—The height of the arch is measured as the distance from a line drawn between (a) the lower border of the internal malleolus and (b) the lower tubercle on the head of the first metatarsal (Feiss line) to (c) the tubercle of the scaphoid, which distance should not exceed one-half inch.

It should be understood that this measurement is relative, and is simply a measurement of proportion in the average foot. A small foot might well have a measurement less than this and still be within normal limits, while a foot larger than the average will give a proportional measurement of much greater than one-half inch. About 5 per cent of the cases examined seem to show a deficiency in this measurement, and this conforms very closely to the Army and Navy average of rejections for flat foot.

Bearing surface.—An imprint taken with the finger-print apparatus will show the shape of the bearing surface of the foot. While this may, when present

in a normal degree, serve to assist in forming an opinion, on the other hand if the imprint is flat, in the absence of other symptoms it would not be sufficient to warrant a diagnosis of weak foot. The fatty pad under the arch which is normally present in the young, the highly developed plantar muscles in the savage tribes, or in those not bred to the shoe, all serve to discount the value of this imprint as an aid to diagnosis. According to Whitman: "Of all the tests, this, so often used to demonstrate the height of the arch and thus confirm a diagnosis of flat foot, is of least importance."

Range of motion.—The range of motion in examining the foot should include flexion, abduction and adduction.

Under normal circumstances the foot will show a concavity along its inner surface, and a line along the crest of the tibia continued over the foot falls over the second toe. Voluntary dorsal and plantar flexion is accomplished by the movement of the astragalus upon the leg bones between the internal and external malleoli. Dorsal flexion is normally between 10° and 20° less than a right angle between the foot and leg. Plantar flexion is much greater and is between 50° and 60° more than a right angle between the foot and leg.

During voluntary abduction and adduction the astragalus is practically fixed between the internal and external malleoli, and the foot moves on the astragalus. The actual range of adduction, while difficult to measure, is about 30° from the line continued from the crest of the tibia; abduction is about 15° from this line.

Voluntary adduction or inversion of the foot, is the most important test of all motions to show the weakness of the foot. Extend the leg; keep the crest of the tibia fixed in the median line, then have the patient turn the foot inward as far as possible without rotating the leg. According to Whitman: "Even mild and early cases of weak foot usually show some limitation of this most important motion, and in many instances it is completely lost, the patient turning the entire limb in the effort to adduct the foot."

The question naturally presents itself: What degree of weak foot may be accepted for service? It is certain that a large number of cases of weak foot are enlisted without being recognized. I think, as a general rule, any man in whom the scaphoid tubercle is not depressed beyond one-half inch below the Feiss line, and who can adduct the feet each between 25° and 30° from the line continued along the crest of the tibia, may be accepted as attaining a standard. It is well also to observe the contour of the inner border of the foot, the feet being placed side by side, noting any beginning downward and inward displacement of the astragalus.

What degree of flat foot should constitute a disability? I think this must depend largely upon the man's rate. We would naturally expect less disability for this cause in the yeoman than in the marine, whose duty is largely a question of feet.

In examining the teeth, look for proper occlusion. Even though few or no teeth are missing, many of them may be useless because of lack of occlusion. In young men with evident general disintegration of the teeth, they may be poor risks even if repaired sufficiently to meet the requirements. Naval dental surgeons are not authorized to do crown or bridge work.

A row of clothes hooks, a mirror, and a buttonhook are recommended.

It is well not to allow any doubt you may have in your mind about passing a defect to be apparent to the candidate. He may possibly

make capital of it later in an attempt to get a medical discharge for "cause existing prior to enlistment."

In filling out rejection report, regardless of whether waiver be or be not recommended, be sure to describe every defect even though some may be of such minor importance that if any one existed alone it would not be considered a disqualification. In considering a recommendation on these reports it is necessary that the bureau should have a clear, composite picture of the physical, mental, and moral status of the candidate. In forwarding telegraphic requests for waiver of deficient height, weight, or chest measurement, always include all three.

Have the men at substations forward the addresses of men rejected by them if there is any possibility that they may be accepted by the medical officer. Have the substation men encourage these men to go to the main office for examination, or to present themselves at the substation on the next visit of the medical officer, if such visits are made. Recommend that men before going to duty at a substation be given a thorough course of instruction at the main office.

Hemorrhoids.—In any case of tendency to varix or varicocele be especially careful in looking for internal hemorrhoids.

FORMS USED BY MEDICAL OFFICERS ON RECRUITING DUTY.

Form 4: Request for supplies (par. 3933, Manual).

Form Ca and Ca 1: Survey of property (par. 2961, Manual).

* Form D and Da 1: Inventory of property (par. 3935, Manual).

Form F (rough): Abstract of patients (par. 2357, Manual).

Form G: Hospital ticket (par. 3937, Manual).

Form H: Health records (par. 2241, Manual).

Form H: Descriptive sheets.

Form L: Request for medical survey (par. 2921, Manual).

Form M: Report of medical survey (par. 2931, Manual).

Form N: Report of death (par. 2431, Manual).

Form O: Request for blank forms.

Form X and Form X (rough), already described.

Changes in Hospital Corps (par. 3953, Manual).

These forms are described in the parts of the Manual to which reference is made. Explanatory notes are also printed on the various forms.

The original recruiting outfit is as follows: Vision test set, urinary test set, stethoscope, thermometer, otoscope, ophthalmoscope, tape-line, and wooden tongue depressors.

Additional supplies of these articles are obtained by requisition, Form 4. The stethoscope, otoscope, and ophthalmoscope are not expendable, and must be accounted for, and if lost or damaged must be surveyed. The other articles are expendable.

The medical officer is assisted by an enlisted man of the Hospital Corps, who records the findings dictated by the medical officer. The Hospital Corps man should give the necessary instructions to candidates to facilitate smoothness of procedure. He should be on the alert during the presence of the candidate in the office for any incident that may escape the notice of the examiner. He may be allowed to make the finger-print records, after he has demonstrated his competence to do so. The prints should be carefully examined by the medical officer in all cases. He may be given the care of the instruments and apparatus. He may assist in the vision and hearing tests. In case of illness among the personnel of the office, he may act as nurse in so far as it does not interfere with the primary duty of the station to secure recruits.

The recruiting medical officer has the medical care of the officers and men of the Navy and Marine Corps attached to the station and in that vicinity, unless otherwise provided. Medicines and necessities, except as above noted, are not furnished by the department, but are procured from local sources on prescription.

In the event of necessary hospital treatment, the patient shall be sent to a suitable local hospital, as provided in article 4532 (1), Navy Regulations, as follows:

Officers and enlisted men of the Navy and Marine Corps when on duty at a place where there is no naval hospital, may be sent to other hospitals upon the order of the commander in chief, or the senior officer present, and the expenses of such persons shall be paid from the naval hospital fund, and no other charge shall be made against their accounts than such as are made for persons under treatment at naval hospitals.

Bills for medical attendance upon enlisted men, for medicines and surgeon's necessities, and for treatment in hospital shall be properly made out and certified to by the medical officer and submitted promptly to the Bureau of Medicine and Surgery before payment, accompanied by a letter of advice giving the disease or injury on account of which the expenses were incurred. Upon all copies of public bills for such expenses the medical officer will certify that Navy medical supplies were not available, or that the services of a Navy medical officer could not be had, or that treatment in hospital was necessary. (Art. 4534, Navy Regulations.)

No expenses for medicines for or medical attendance upon a naval officer will be included in the account current.

PHYSICAL EXAMINATION OF THE PERSONNEL OF THE NAVAL MILITIA PRIOR TO BEING MUSTERED INTO THE SERVICE OF THE UNITED STATES.

1. All officers and enlisted men must undergo this examination before mustering, regardless of any prior physical examination.

2. The examination will be conducted by medical officers of the Navy, or by medical officers of the Naval Militia in the service of the United States, who have qualified as such, physically and professionally, and have been mustered in.

3. The physical requirements are prescribed in General Order No. 150.

4. Minor or temporary physical disqualifications may be recommended to the Navy Department (Bureau of Navigation or headquarters, United States Marine Corps, as the case may be) for waiver, using the prescribed form, but a suitable note of such physical disqualifications shall be made a part of the descriptive list of the individual. If a waiver be granted, this shall be recorded in red ink in the proper place on page 2 of the health record, as follows: "Defective vision waived by Bu. Nav. (or Maj. Gen. Commandant) 6-1-16." This shall also be entered in the descriptive list of the service record.

5. New health records will be opened for all officers and enlisted men. Where Navy health records have been adopted as "State health records," a copy of entries in the vaccination, typhoid prophylactic, and dental records, and in the abstract of health record, will be entered in the proper places in the new health record. The State health record will be closed and forwarded to the Division of Naval Militia Affairs. The new health record shall have noted on its face in red ink, "Naval Militia in the service of the United States."

6. All officers and enlisted men will be vaccinated (cowpox) immediately after muster into the service of the United States unless there is a well-marked recent vaccination scar, or two *pitted* vaccination scars of older origin, or evidence of a previous attack of smallpox (I 3211). Officers and enlisted men will also be given the typhoid prophylactic, unless the State health records show that they have received it within a period of four years preceding, or that they are over 45 years of age, or have had a previously well-defined attack of typhoid fever (I 3212).